STR-AV220/AV220A/AV320R/AV320RA

SERVICE MANUAL

AEP Model
STR-AV220A/320RA
UK Model
STR-AV320R
West Germany Model
STR-AV220/320R

Photo : STR-AV320

SPECIFICATIONS

Amplifier section

Continuous RMS power output

STR-AV220/AV220A :
25 W + 25 W (4/8 ohms, at 40 Hz – 20 kHz less than 0.8% total harmonic distortion)

STR-AV320R(WG)/AV320RA :
40 W + 40 W (4/8 ohms, at 40 Hz – 20 kHz less than 0.8% total harmonic distortion)

STR-AV320R(UK) : 50W+50W (4/8 ohms, at 40Hz–20kHz less than 0.8% total harmonic distortion)

Power output

IEC/DIN : STR-AV220/AV220A
30 W + 30 W (4 ohms at 1 kHz 0.7%)

STR-AV320R (WG) /AV320RA
50 W + 50 W (4 ohms at 1 kHz 0.7%)

STR-AV320R (UK)
55W+55W (8 ohms at 1kHz 0.7%)

Harmonic distortion
Less than 0.8% at rated output

Frequency response
PHONO: RIAA equalization curve ±0.5 dB
CD, VIDEO, TAPE: 40 Hz – 50 kHz $^{+0}_{-5}$ dB

Inputs

	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	2.5 mV	50 kilohms	74 dB 72 dB* (A, 2.5 mV)
CD VIDEO TAPE	150 mV	50 kilohms	95 dB 80 dB* (A, 150 mV)

* '78 IHF

Outputs

REC OUT, VIDEO (AUDIO) OUT	Voltage 150 mV Impedance 10 kilohms
SPEAKER A, B	Accepts speakers of 4 – 16 ohms
HEADPHONES	Accepts low and high impedance headphones

Tone controls BASS: ±10 dB at 100 Hz
TREBLE: ±10 dB at 10 kHz
Muting −20 dB (STR-AV320RA only)
DBFB +12 dB at 70 Hz

Tuner section

	FM tuner section	AM tuner section
Tuning range	87.5 – 108 MHz	531 – 1,602 kHz
Antenna terminals	75 ohms, unbalanced	External antenna terminal
Sensitivity at 50 dB quieting	18.3 dBf, 4.5 μV (mono) 38.3 dBf, 45 μV (stereo)	——
Usable sensitivity	11.2 dBf, 2 μV (IHF)	Loop antenna: 500 μV (at 1,000 kHz)

– Continued on page 2 –

FM STEREO FM-AM RECEIVER

SONY®

	FM tuner section	AM tuner section
Signal-to-noise ratio	76 dB (mono) 70 dB (stereo)	54 dB (at 50 mV/m)
Harmonic distortion	0.3% (mono), 0.5% (stereo) at 1 kHz	0.5% (at 50 mV/m, 400 Hz)
Selectivity	60 dB at 400 kHz	30 dB at 9 kHz
Separation	45 dB at 1 kHz	——
Frequency response	30 Hz – 15 kHz $\pm^{0.5}_{2}$ dB	——

General

System
Tuner section: PLL quartz-locked digital synthesizer system
Preamplifier section: low-noise NF type equalizer amp
Power amplifier section: quasi-complementary SEPP

Power requirements
220V AC, 50／60Hz : AEP, West Germany Model
240V AC, 50／60Hz : UK Model

Power consumption
STR-AV220／AV220A : 85W
STR-AV320R (WG) ／AV320RA : 120W
STR-AV320R (UK) : 230W
In standby condition: 5 watts (STR-AV320RA／AV320R)

AC outlets: One switched (100 watts) (STR-AV320RA／AV320R)

Dimensions: Approx. 430 × 110 × 300 mm (w/h/d) ($17 \times 4\,^{5}/_{16} \times 11\,^{7}/_{8}$ inches) including projecting parts and controls

Weight: Approx. 5.8 kg (12 lb 13 oz) net (STR-AV220／AV220A)
Approx. 6.5 kg (14 lb 5 oz) net (STR-AV320R／AV320RA)

Accessories supplied
FM wire antenna (1)
AM loop antenna (1)
Remote Commander RM-S103 (1)
Remote Commander RM-U203 (1) (STR-AV320R : UK)
Sony batteries SUM 3(NS) (2)

Design and specifications subject to change without notice.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSEL!

Lithiumbatteri—Eksplosjonsfare ved fejlagtig handtering.
Udskiftning ma kun ske med batteri
af samme fabrikat og type.
Lever det brugte batteri tiibage til leverand ϕ ren.

ADVARSEL

Lithiumbatteri—Eksplosjonsfare.
Ved utskifting benyttes kun batteri som
anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverand ϕ ren.

VARNING

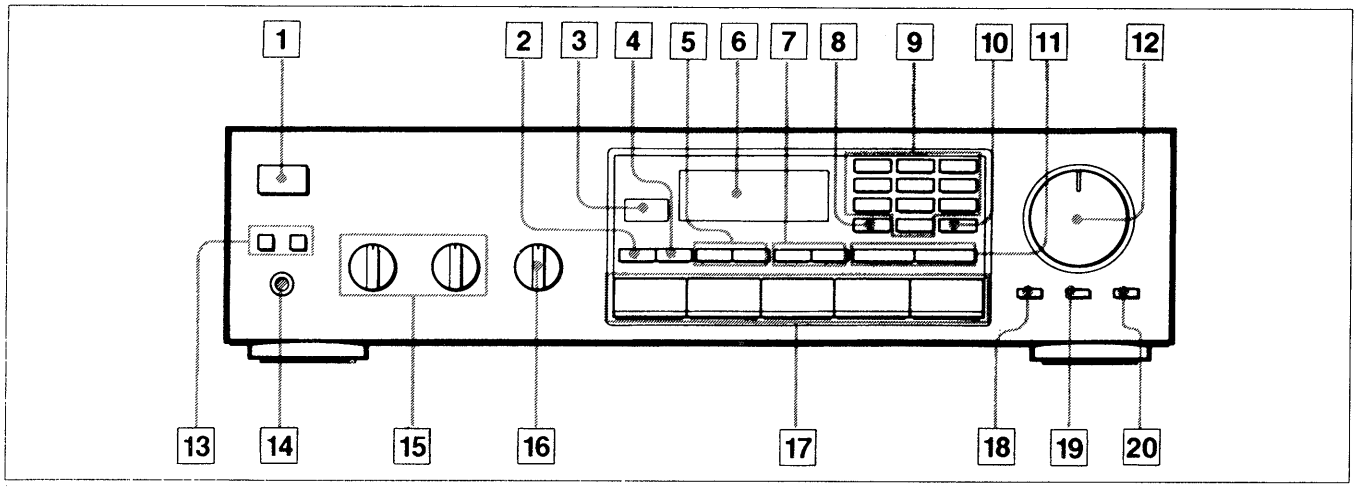
Explosionsfara vid felaktigh batteribyte.
Anvand samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera anvant batteri enligt fabrikantens
instruktion.

VAROITUS

Paristo voi rajahtaa, jos se on virheellisesti asennettu.
Vaihda paristo aincastaan laitevalmistajan suosittelemaan
tyyppiln. Havita kaytetty paristo valmistajan ohjeiden
mukaisesti.

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS



[1] **POWER switch**

[2] **DIRECT TUNING button**

[3] **Remote sensor** (STR-AV320RA only)

[4] **FM MODE button**
When an FM stereo program is noisy or hard to receive, press this button. The STEREO indicator goes out (the sound is heard in monaural, but the reception will be improved). To return to the stereo mode, press again or change the frequency.

[5] **BAND selectors**

[6] **Display window**

[7] **TUNING +/– buttons**

[8] **MEMORY button**

[9] **Numeric buttons**

[10] **SHIFT button**

[11] **PRESET +/– buttons**

[12] **VOLUME control and indicator**
The indicator is only equipped with the STR-AV320RA.

[13] **SPEAKERS selectors**
Depress to select which speaker system to drive. For both speaker systems, depress A and B.

[14] **HEADPHONES jack** (stereo phone jack)

[15] **TONE controls**
Turn the TREBLE control to adjust the high frequency sound. Turn BASS control to adjust the low frequency sound.

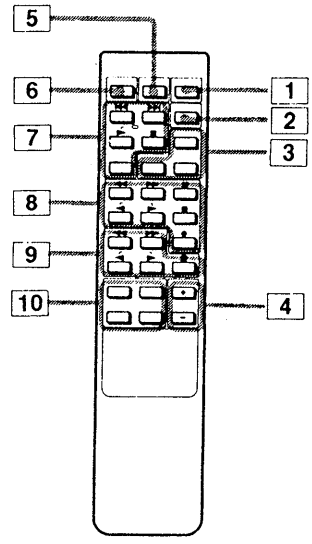
[16] **BALANCE control**
Turn clockwise to decrease the left channel volume, and turn counterclockwise to decrease the right channel volume.

[17] **Function selectors**

[18] **DBFB (Dynamic Bass Feed Back) button and indicator**
To reinforce the bass frequency sound, press this button.

[19] **MUTING button and indicator** (STR-AV320RA only)
Press to attenuate the sound level immediately (–20 dB attenuation). Pressing this button makes the indicator be lighted. To restore the sound level, press again.

[20] **SURROUND button and indicator**
To obtain the surround effect, press this button.



[1] **POWER button**

[2] **DBFB button**

[3] **TUNER PRESET +/– and SHIFT buttons**

[4] **VOLUME +/– buttons**

[5] **SURROUND button**

[6] **MUTING button**

[7] **CD player operation buttons**
D. (disc) SKIP: When your CD player is equipped with a multi-disc changer, use this button to select loaded disc.
CD ►: Selects the CD function and starts CD playback.

[8] **DECK B operation buttons** (also for single tape deck)
DECK B ◄/►: Select tape function and start tape playback on deck B.

[9] **DECK A operation buttons**
DECK A ◄/►: Select tape function and start tape playback on deck A.

[10] **Function select buttons**

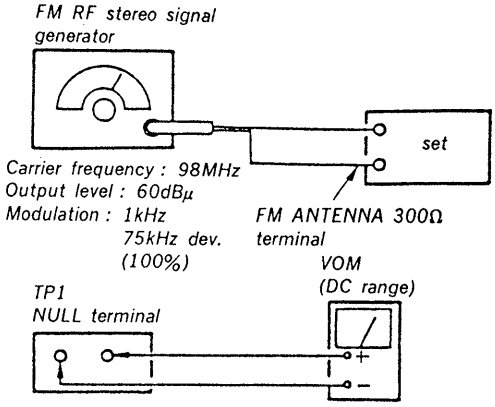
Notes on the remote commander
For the functions other than the receiver's own ones, the remote commander is effective only with Sony components having a remote sensor with R mark.

SECTION 2
ELECTRICAL ADJUSTMENTS

FM SECTION

• FM Discriminator (NULL) Adjustment

Setting :



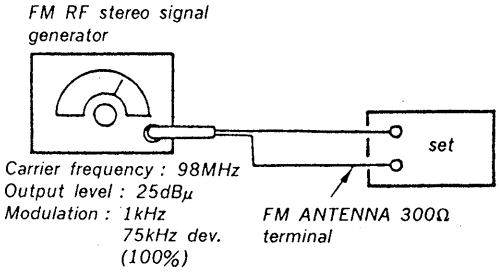
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator adjustment.

• FM Stereo Operation Level Adjustment

Setting :

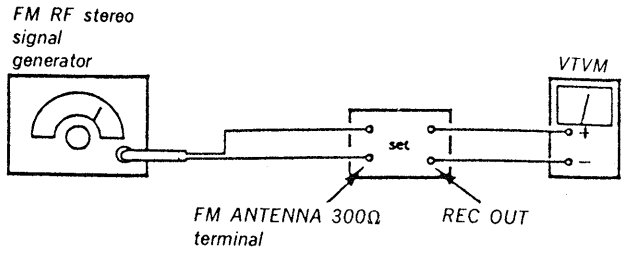


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the STEREO LED goes on.

• FM Stereo Separation Adjustment

Setting :



Carrier frequency : 98MHz
Output level : 60dBμ
Modulation :
Audio (1kHz) : 33.75kHz dev. (45%)
Pilot (19kHz) : 7.5kHz dev. (10%)
Sub-channel (38kHz) : 33.75kHz dev. (45%)

Procedure :

Tune the set to 98MHz.

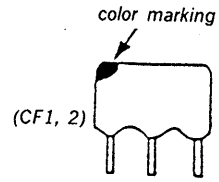
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ

The separations of both channels should be equal.

Note on Ceramic Filter (CF1, 2) Replacement.

This set employs two ceramic filters (CF1, 2) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by (* A, * B) connection is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



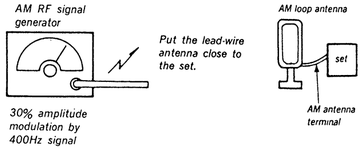
○ : short
× : open

Ceramic filter		Connection		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	* A (D326)	* B (D327)	
White	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	○	10.650

AM SECTION

• AM Meter Adjustment

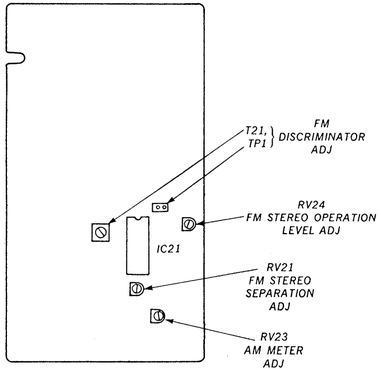
Setting :


AM RF signal generator
Put the lead-wire antenna close to the set.
30% amplitude modulation by 400Hz signal
AM loop antenna
set
AM antenna terminal

Procedure :

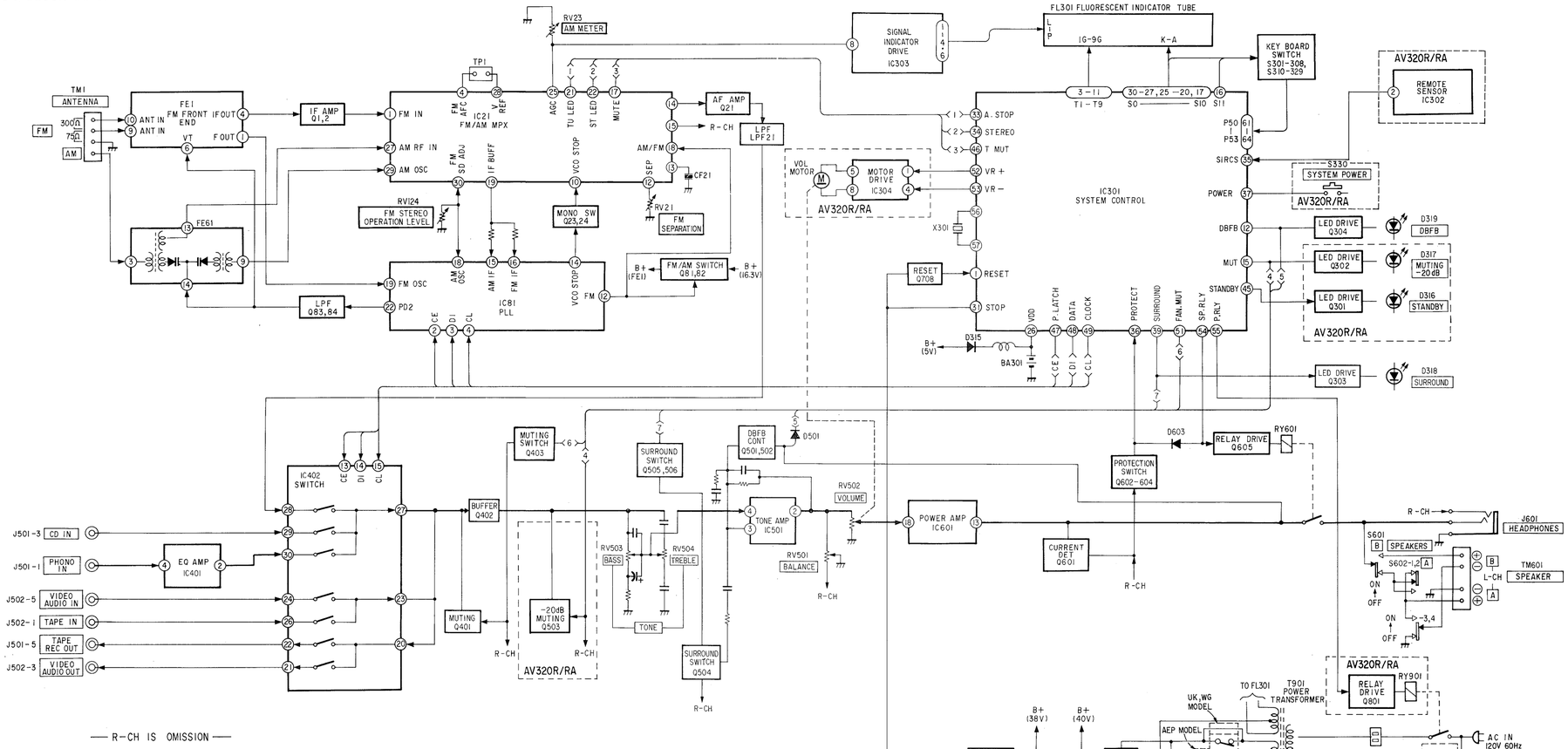
1. Tune the set to 1,050kHz.
2. Adjust the RV23 so that the 5 point segment of the signal meter goen on.

Adjustment Location : tuner board

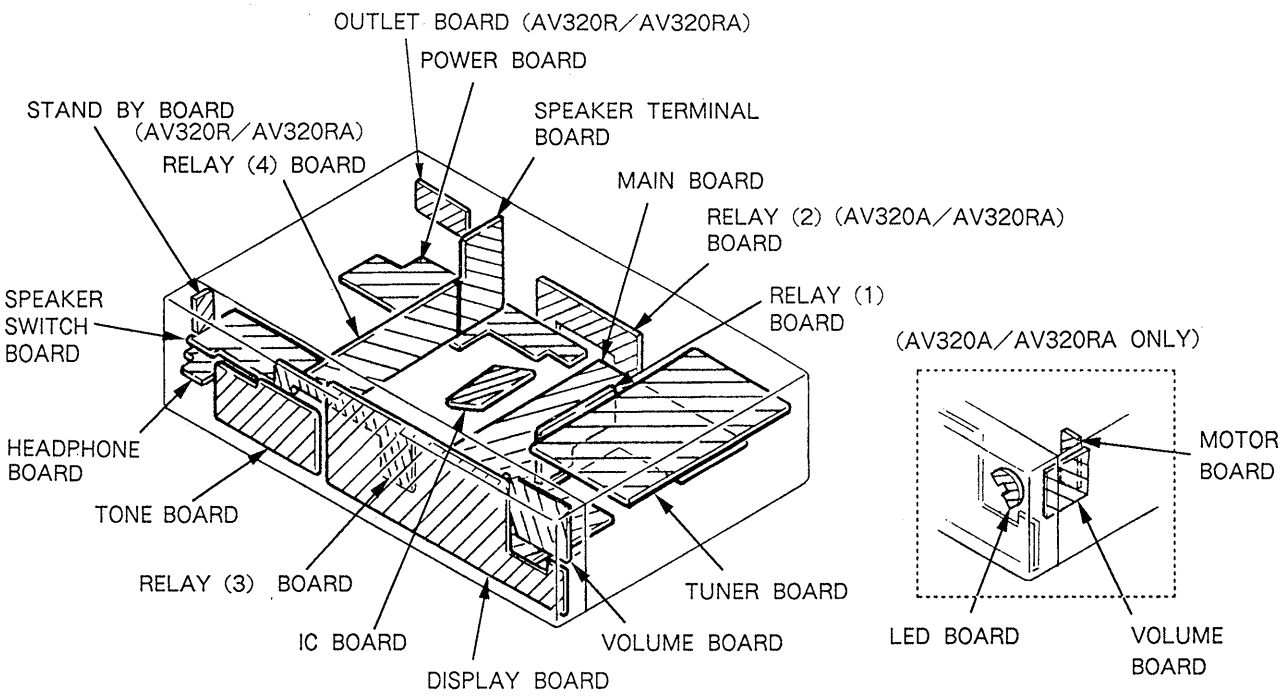


SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM

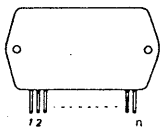


CIRCUIT BOARDS LOCATION



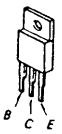
3-2. SEMICONDUCTOR LEAD LAYOUTS

STK-4182MK2
STK-4152II

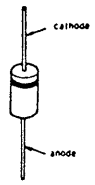


2SA988-F
2SC3113-AB

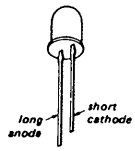
2SD1585-L



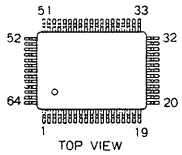
HZ4ALL
RD13EL2



SEL2510C



μPD75206G-557-1B

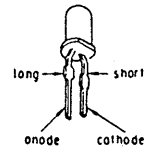


2SB733-5

2SK246GR3

MC921

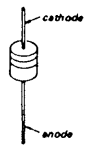
SEL2210S-C
SEL2810A-C



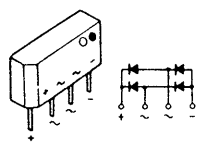
BN1A3Q
2SA1175-HFE

DTA114ES
DTC114ES
DTA124ES
DTC124ES
2SC2603-EF
2SC3623A-LK
2SC26690Y

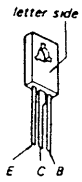
HZS6C3L
UZ-4.3BSB
UZ-6.2BSC
UZ-15BSB
UZ-27BSB
1SS120



RBA-402
S1VB40



2SD809-K



3-3. PRINTED WIRING BOARDS —MAIN SECTION—

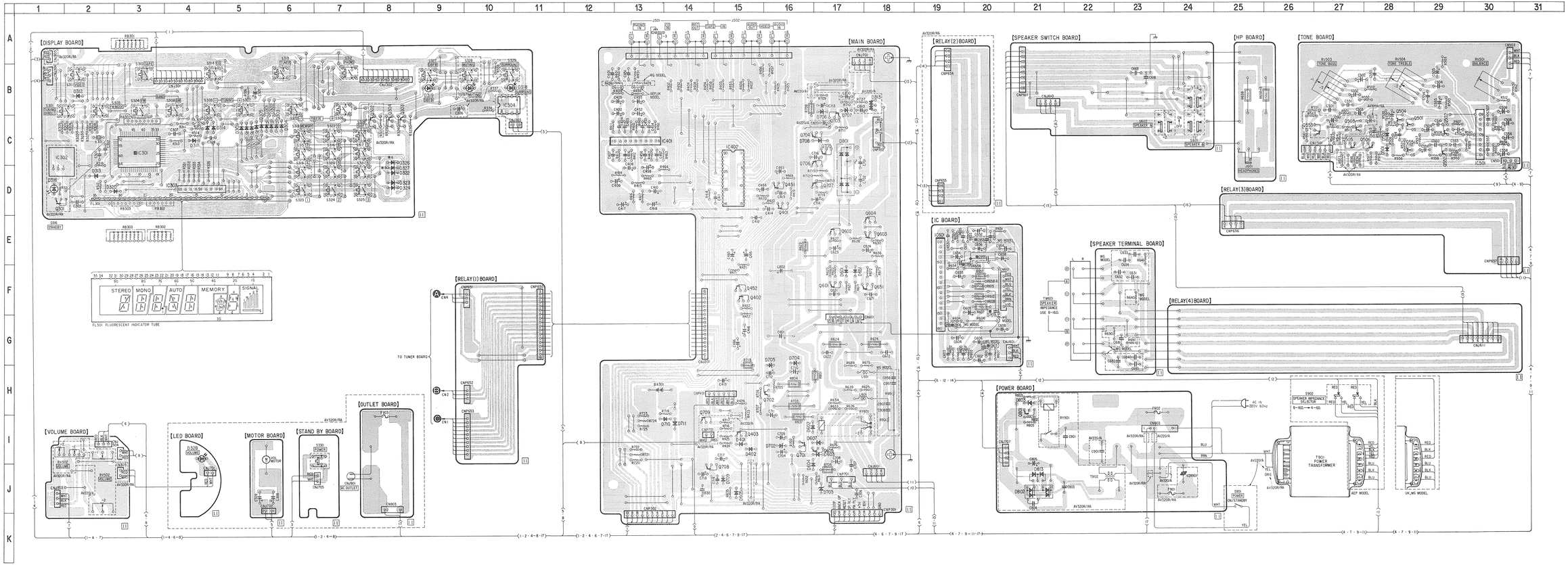
• Refer to page 8 for Semiconductor Lead Layouts.

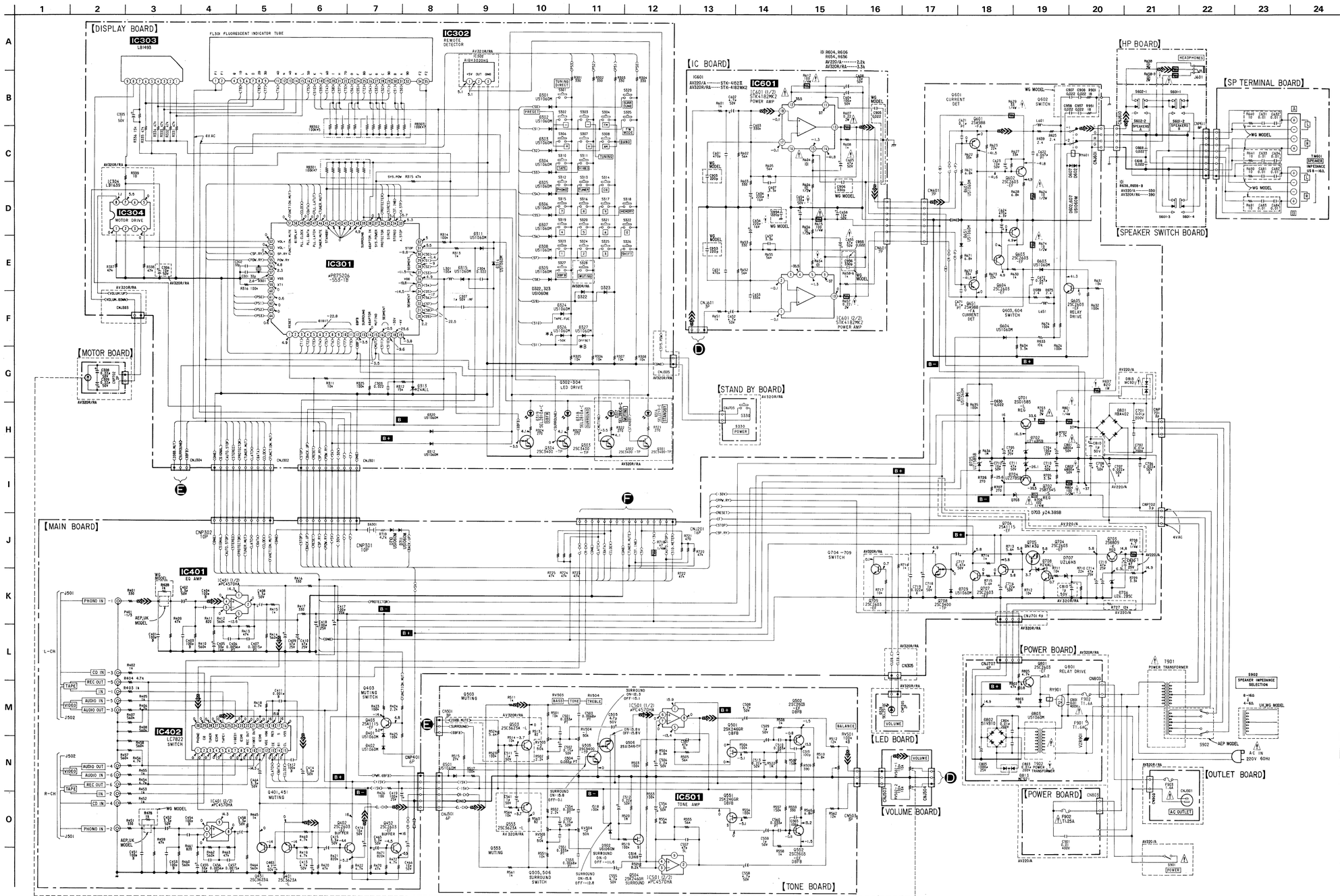
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
IC301	C-3	D312	B-2
IC302	C-1	D313	D-2
IC303	D-4	D314	C-4
IC304	B-10	D315	C-4
IC401	C-13	D316	D-1
IC402	D-15	D317	B-10
IC501	C-30	D318	B-10
IC601	F-19	D319	B-9
		D320	D-3
Q301	D-1	D322	D-8
Q302	C-8		
Q303	C-8	D323	D-8
Q304	C-8	D324	D-8
Q401	D-16	D326	C-8
		D327	D-8
Q402	F-15	D328	I-4
Q403	I-15		
Q451	D-16	D401	I-15
Q452	F-15	D402	I-15
Q501	C-28	D501	C-28
		D502	C-28
Q502	C-29	D601	F-17
Q503	C-27		
Q504	C-28	D602	I-16
Q505	C-27	D603	I-17
Q506	C-28	D604	J-16
		D605	J-15
Q551	C-28	D607	I-17
Q552	C-29		
Q553	C-27	D651	F-17
Q601	F-17	D702	I-16
Q602	E-17	D703	J-17
		D704	H-16
Q603	E-18	D705	H-16
Q604	E-18		
Q605	I-17	D706	B-17
Q651	F-18	D707	B-17
Q701	I-16	D708	C-17
		D709	J-15
Q702	H-16	D710	I-14
Q703	C-17		
Q704	C-17	D711	I-14
Q705	C-17	D801	D-17
Q706	D-17	D802	J-21
		D803	H-21
Q707	D-17		
Q708	J-14	AV220/AV220A	
Q709	I-14		
Q801	I-21	D813	B-18
		AV320R/AV320RA	
D301	C-6	D813	J-21
D302	C-6		
D303	C-6		
D304	C-6		
D305	C-5		
D306	C-5		
D307	C-5		
D308	C-5		
D309	C-5		
D311	C-4		

Note :

- ○—: parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ＊A, ＊B : See Page 4 for Note on Ceramic Filter (CF1, 2) Replacement.





Note :

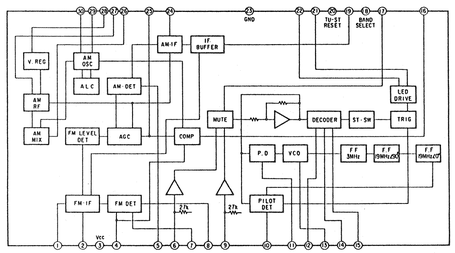
- ✻A, ✻B : See Page 4 for Note on Ceramic Filter (CF1, 2 and 3) Replacement.
- All capacitors are in μF unless otherwise noted. pF : μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ⏦ : nonflammable resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

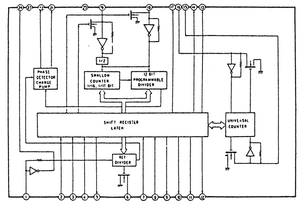
- ▬▬ : B+ Line
- ▪▪▪ : B− Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : PHONO
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : PHONO
- WG : West Germany

• IC BLOCK DIAGRAMS

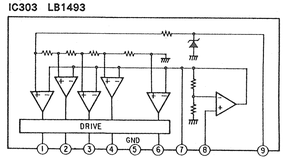
IC21 LA1851N



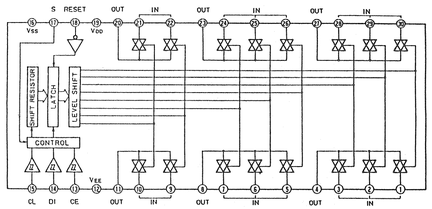
IC81 LC7218



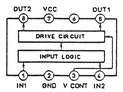
IC303 LB1493



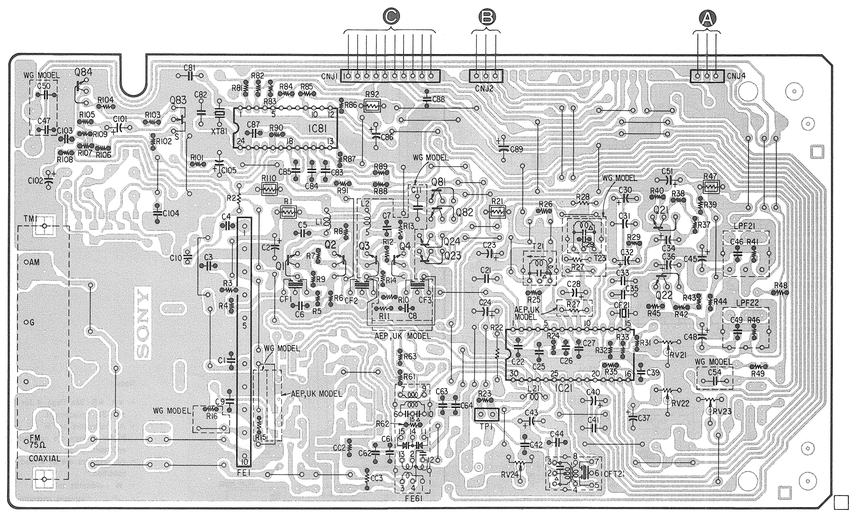
IC502 LC7822



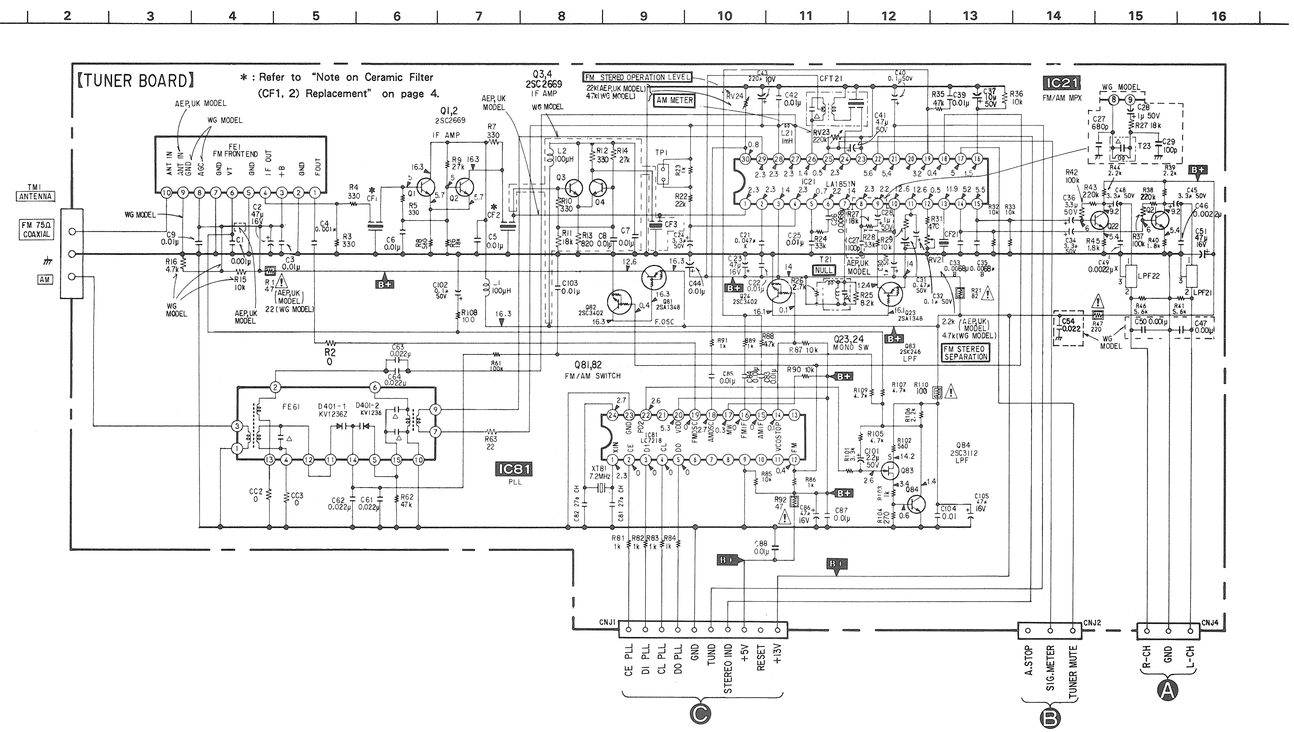
IC503 LB1639



3-5. PRINTED WIRING BOARDS —TUNER SECTION—



3-6. SCHEMATIC DIAGRAM —TUNER SECTION—



3-7. EXPLANATION OF IC301 (μPD75206)

PIN No.	SIGNAL NAME	FUNCTION		I/O	ACTIVE
1	RESET	Micro Computer RESET		I	L
2	T0	FL tube indication (invalid) digit		O	H
3	T1	FL tube indication digit	T1	O	H
4	T2	FL tube indication digit	T2	O	H
5	T3	FL tube indication digit	T3	O	H
6	T4	FL tube indication digit	T4	O	H
7	T5	FL tube indication digit	T5	O	H
8	T6	FL tube indication digit	T6	O	H
9	T7	FL tube indication digit	T7	O	H
10	T8	FL tube indication digit	T8	O	H
11	T9	FL tube SIGNAL indication digit	T9	O	H
12	T10／PH3	DBFB Output		O	H
13	T11／PH2	IF WIDE／NARROW Output		O	H
14	T12／PH1	Adapter Output		O	H
15	T13／PH0	−20dB Muting Output		O	H
16	T14／S11	FL tube indication Segment／Diode	S11	O	H
17	T15／S10	FL tube indication Segment／Diode	S10	O	H
18	V road	FL tube pulldown power supply		−	−
19	V pre	FL tube driver power supply		−	−
20	S9	FL tube indication Segment／Diode	S9	O	H
21	S8	FL tube indication Segment／Key Scan	S8	O	H
22	S7	FL tube indication Segment／Key Scan	S7	O	H
23	S6	FL tube indication Segment／Key Scan	S6	O	H
24	S5	FL tube indication Segment／Key Scan	S5	O	H
25	S4	FL tube indication Segment／Key Scan	S4	O	H
26	Vdd	Micro Computer power supply		−	−
27	S3	FL tube indication Segment／Key Scan	S3	O	H
28	S2	FL tube indication Segment／Key Scan	S2	O	H
29	S1	FL tube indication Segment／Key Scan	S1	O	H
30	S0	FL tube indication Segment／Key Scan	S0	O	H
31	P00／INT4	Signal to cut power supply	STOP	I	L
32	P01／SCK	Serial latch for electrical adjustment use	SI. LAT	I	L

−Continued on page 22−

PIN No.	SIGNAL NAME	FUNCTION		I／O	ACTIVE
33	P02／S0	Tuner Auto Stop input	ASTP	I	L
34	P03／S1	Tuner Stereo input	STEREO	I	L
35	P10／INT0	Remote Control Signal input	SIRCS	I	L
36	P11／INT1	Protector input	PROTECT	I	L
37	P12／INT2	System Power Key input	PKEY	I	L
38	P13／TI0	Adapter Mechanical Switch input	AKEY	I	H
39	P20	Surround output	SURROUND	O	H
40	P21	Video Control A	VCRA	O	H
41	P22	Video Control B	VCRB	O	H
42	P23／BUZ	Video Inhibit	VCRI	O	H
43	P30	Protector Muting	PMUT	O	L
44	P31	Source Direct Output		O	H
45	P32	Standby LED Output	STANBY	O	H
46	P33	Tuner Muting	TMUTE	O	H
47	P60	PLL／7822 Latch	PLAT	O	H
48	P61	PLL／7822／SI Data	DATA	I／O	H
49	P62	PLL／7822／SI Clock	CLOK	I／O	H
50	P63	IF WIDE／NARROW Display output		O	H
51	P40	Function Muting	FMUTE	O	L
52	P41	Motor Volume UP	VOL+	O	H
53	P42	Motor Volume DOWN	VOL−	O	H
54	P43	Speaker Relay	SP. RY	O	H
55	PP0	Power Relay	POW. RY	O	H
56	X1	Ceramic Oscillator		−	−
57	X2	Ceramic Oscillator		−	−
58	Vss	Micro Computer GND		−	−
59	XT1	−		−	−
60	XT2	−		−	−
61	P50	P50	Key Scan Input	I	H
62	P51	P51	Key Scan Input	I	H
63	P52	P52	Key Scan Input	I	H
64	P53	P53	Key Scan Input	I	H

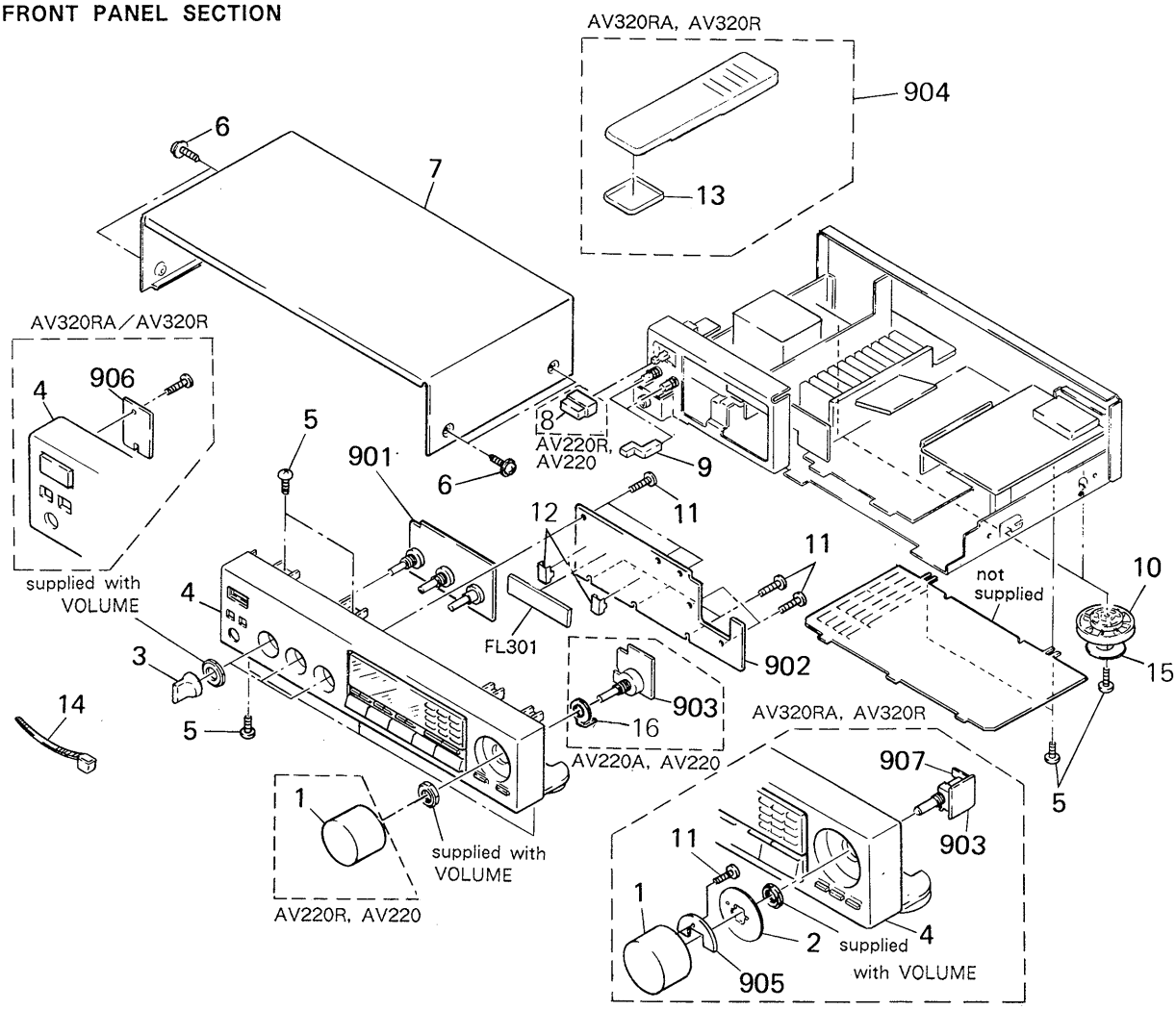
SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color
  • WG : West Germany

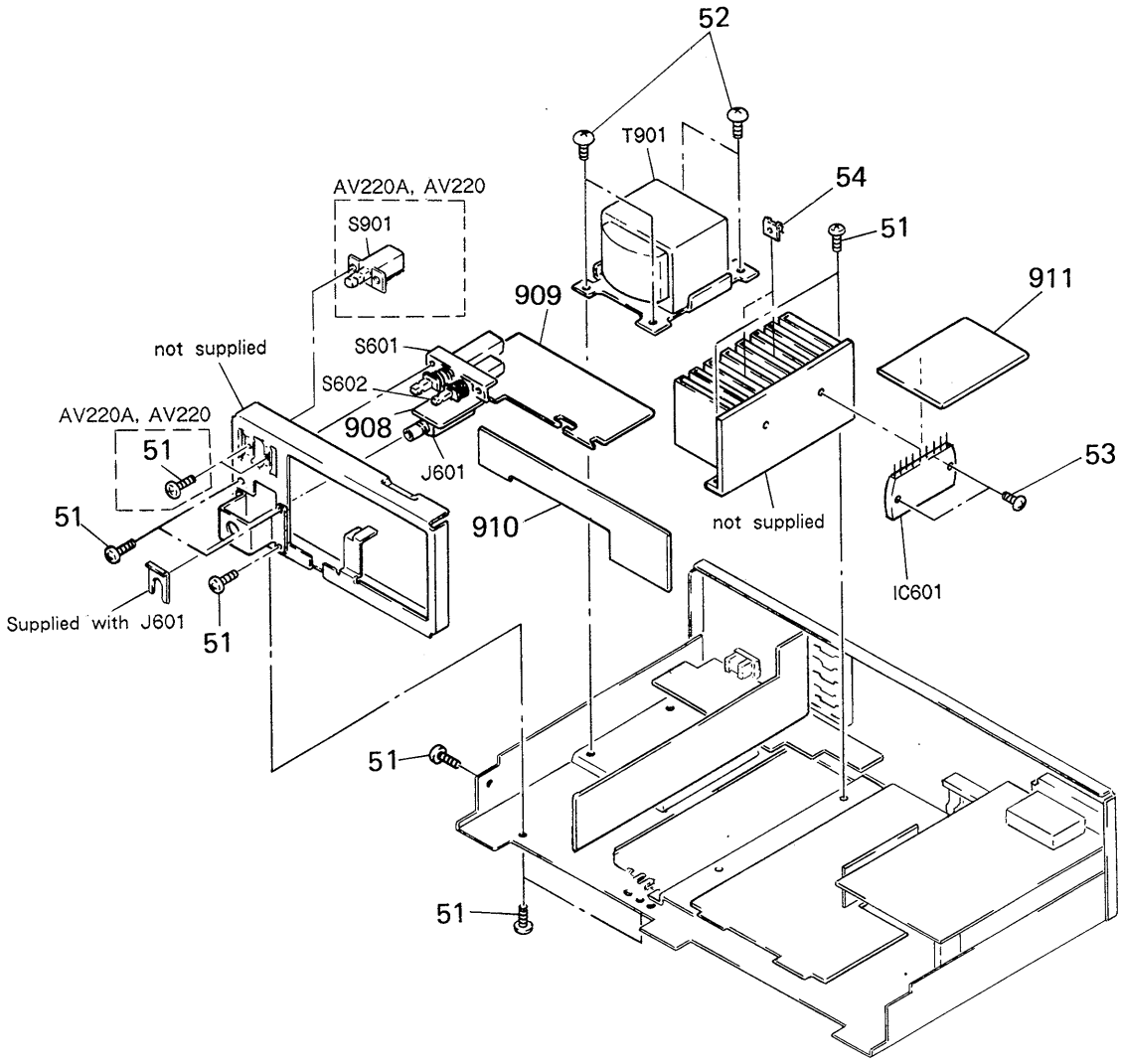
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) FRONT PANEL SECTION



No.	Part No.	Description	Remarks
1	4-925-121-01	(AV320R/RA)...KNOB (V2)	
	4-925-121-71	(AV220/A).....KNOB (V2)	
2	*4-931-603-01	(AV320R/RA)...SPACER	
3	4-916-745-01	KNOB (DIA.21)	
4	X-4906-831-1	(AV320R/RA)...PANEL ASSY, FRONT	
	X-4906-834-1	(AV220/A).....PANEL ASSY, FRONT	
5	7-682-548-04	SCREW +BVTT 3X8 (S)	
6	3-704-366-01	SCREW (CASE) (M3X8)	
7	4-925-066-11	CASE	
8	3-354-912-01	(AV220/A)...KNOB, POWER	
9	4-906-872-01	KNOB, SQUARE	
10	X-3304-938-2	FOOT ASSY	
11	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
12	*4-924-989-11	HOLDER (FL TUBE)	
13	2-181-754-01	(AV320RA,AV320R:WG)...COVER,BATTERY	
13	4-925-079-01	(AV320R:UK)...COVER(6),BATTERY	
14	3-701-748-00	CLAMP	
15	4-923-836-11	CUSHION	
16	*4-925-044-01	(AV220/A)...BRACKET (VOL GROUND)	
901	*A-4334-398-A	(AV320R/RA)...MOUNTED PCB, TONE	
	*A-4334-413-A	(AV220/A).....MOUNTED PCB, TONE	
902	*A-4334-002-A	(AV220/A).....MOUNTED PCB, DISPLAY	
	*A-4334-997-A	(AV320R/RA)...MOUNTED PCB, DISPLAY	
903	*1-634-063-11	PC BOARD, VOLUME	
904	1-465-420-11	(AV320R:UK) ...REMOTE COMMANDER (RM-U203)	
904	1-465-423-11	(AV320RA,AV320R:WG)...REMOTE COMMANDER (RM-S103)	
905	*1-634-064-11	(AV320R/RA)...PC BOARD, LED	
906	*1-634-068-11	(AV320R/RA)..PC BOARD, STAND BY	
907	*1-634-061-11	(AV320R/RA)...PC BOARD, MOTOR	
FL301	1-519-509-11	INDICATOR TUBE, FLUORESCENT	

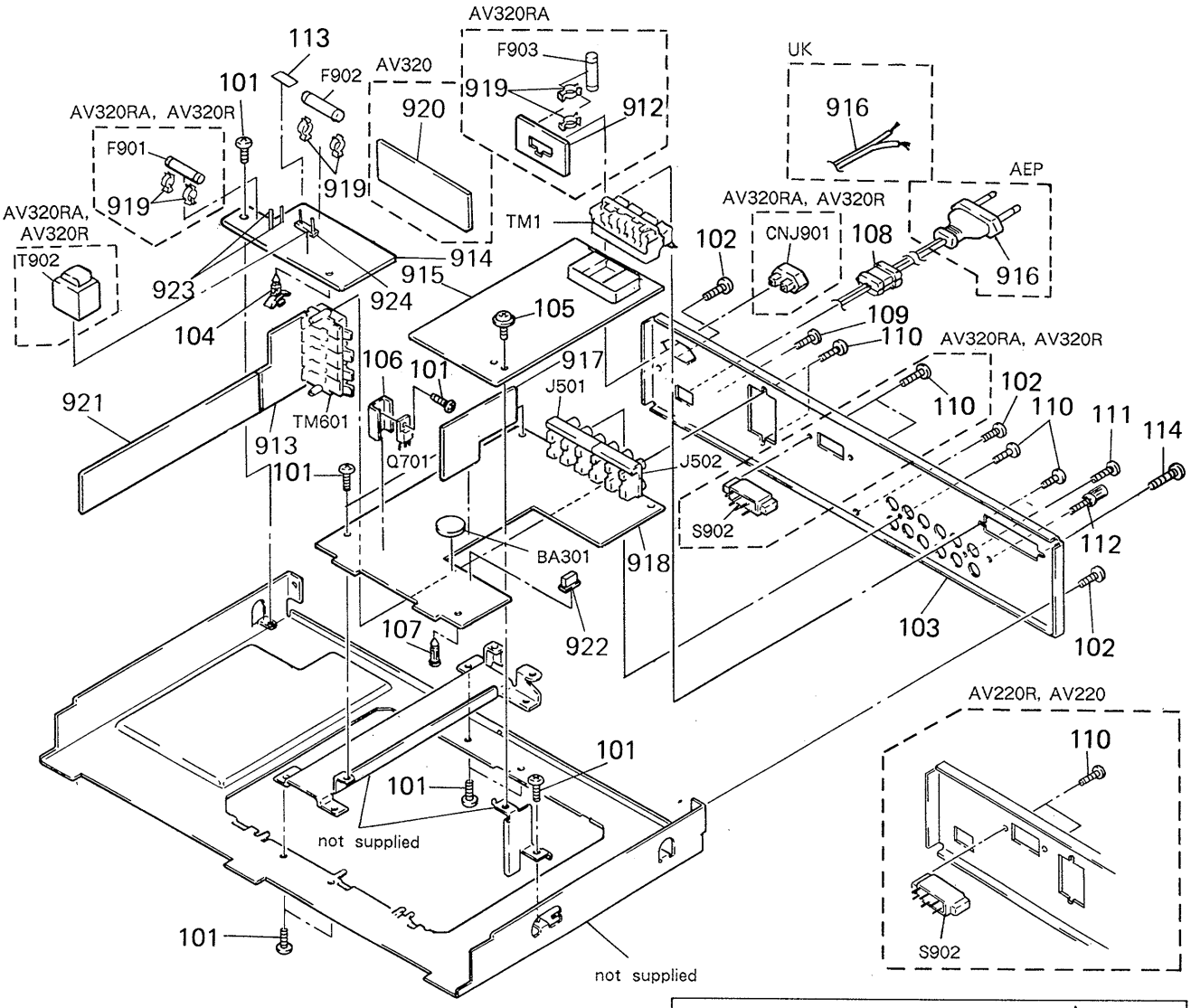
(2) CHASSIS SECTION-1



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remarks
51	7-682-548-04	SCREW +BVTT 3X8 (S)	
52	7-682-560-04	SCREW +BVTT 4X6 (S)	
53	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
54	*4-881-752-01	(WG)...NUT, PLATE, SPECIAL	
908	*1-634-070-11	PC BOARD, HEADPHONE	
909	*1-634-069-11	PC BOARD, SPEAKER SWITCH	
910	*1-634-067-11	PC BOARD, RELAY (3)	
911	*1-634-060-11	PC BOARD, IC	
IC601	8-749-900-34	(AV320R/RA)...IC STK4182MK2	
IC601	⚠ 8-749-941-52	(AV220/A)...IC STK4152IT	
J601	1-507-863-51	JACK, LARGE TYPE (HEADPHONES)	
S601	1-571-485-11	SWITCH, PUSH (2 KEY)(SPEAKER A)	
S602	1-571-485-11	SWITCH, PUSH (2 KEY)(SPEAKER B)	
S901	⚠ 1-554-685-11	(AV220/A)..SWITCH, PUSH (AC POWER)(1 KEY)	
T901	⚠ 1-449-758-11	(AV320R:UK)...TRANSFORMER, POWER	
T901	⚠ 1-449-760-11	(AV320R:WG)...TRANSFORMER, POWER	
T901	⚠ 1-449-761-11	(AV220).....TRANSFORMER, POWER	
T901	⚠ 1-450-140-11	(AV320RA).....TRANSFORMER, POWER	
T901	⚠ 1-450-141-11	(AV220A).....TRANSFORMER, POWER	

(3) CHASSIS SECTION-2



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
101	7-682-548-04	SCREW +BVTT 3X8 (S)	
102	7-682-548-09	SCREW +BVTT 3X8 (S)	
103	*4-931-096-41	(AV320RA).....PANEL, BACK	
	*4-931-096-51	(AV320R:WG)...PANEL, BACK	
	*4-931-096-61	(AV220A).....PANEL, BACK	
	*4-931-096-71	(AV220).....PANEL, BACK	
	*4-931-096-81	(AV320R:UK)...PANEL, BACK	
104	*3-346-265-11	HOLDER, PC BOARD	
105	2-383-566-00	SCREW	
106	*4-880-403-11	HEAT SINK	
107	*3-669-610-00	SPACER	
108	*3-703-244-00	BUSHING (2104), CORD	
109	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
110	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
111	7-621-849-00	SCREW, TAPPING	
112	3-706-165-00	SCREW	
113	3-701-947-12	(AV220/A)...LABEL (T1.25A), FUSE	
114	3-704-242-01	(WG)...SCREW, TERMINAL, +BVTP CLAW	
912	*1-635-428-11	(AV320R/RA)...PC BOARD, OUTLET	
913	*1-634-071-11	PC BOARD, SPEAKER TERMINAL	
914	*A-4334-003-A	(AV220/A).....MOUNTED PCB, POWER	
	*A-4334-998-A	(AV320R/RA)...MOUNTED PCB, POWER	
915	*A-4303-280-A	(AEP,UK)...MOUNTED PCB, TUNER (TCB007-2JK2)	
	*A-4303-281-A	(WG).....MOUNTED PCB, TUNER (TCB007-2KK2)	
916	⚠1-555-750-00	(AEP,WG).....CORD, POWER	
	⚠1-556-035-00	(AV320:UK)...CORD, POWER	

No.	Part No.	Description	Remarks
917	*1-634-065-11	PC BOARD, RELAY (1)	
918	*A-4334-070-A	(AV220).....MOUNTED PCB, MAIN	
	*A-4334-073-A	(AV320R:WG).....MOUNTED PCB, MAIN	
	*A-4334-996-A	(AV320RA,AV320R:UK)..MOUNTED PCB, MAIN	
	*A-4334-999-A	(AV220A).....MOUNTED PCB, MAIN	
919	1-533-183-11	HOLDER, FUSE	
920	*1-634-066-11	(AV320R/RA)...PC BOARD, RELAY (2)	
921	*1-634-073-11	PC BOARD, RELAY (4)	
922	*1-565-514-11	SOCKET, CONNECTOR 2P	
923	1-535-416-00	TERMINAL	
924	*1-560-265-00	BASE POST (U-TYPE)	
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)	
CNJ901	⚠1-526-751-00	(AV320R:UK).....OUTLET, AC(AC OUTLET)	
CNJ901	⚠1-526-794-11	(AV320RA,AV320R:WG)..OUTLET, AC(AC OUTLET)	
F901	⚠1-532-973-11	(AV320R/RA)...FUSE (1.6A)	
F902	⚠1-532-967-11	(AV220/A).....FUSE (1.25A)	
F902	⚠1-532-973-11	(AV320R/RA)...FUSE(1.6A)	
F903	⚠1-532-973-11	(AV320R/RA)...FUSE(1.6A)	
J501	1-565-320-11	JACK, PIN 6P (PHONE/CD/TAPE)	
J502	1-565-320-11	JACK, PIN 6P (VIDEO/TAPE)	
Q701	8-729-107-25	TRANSISTOR 2SD1585-L	
S902	1-570-046-21	(AEP)...SWITCH, VOLTAGE CHANGE (SPEAKER IMPEDANCE SELECTOR)	
T902	⚠1-448-523-11	(AV320R/RA)...TRANSFORMER, POWER	
TM1	*1-537-138-31	(AEP,UK)...TERMINAL BOARD (ANT)	
TM601	⚠1-153-706-00	TERMINAL BOARD(SP)(SPEAKER A/B)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...
- WG : West Germany

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-4334-398-A	(AV320R/RA)...MOUNTED PCB, TONE
	*A-4334-413-A	(AV220/A).....MOUNTED PCB, TONE
902	*A-4334-002-A	(AV220/A).....MOUNTED PCB, DISPLAY
	*A-4334-997-A	(AV320R/RA)...MOUNTED PCB, DISPLAY
903	*1-634-063-11	PC BOARD, VOLUME
904	1-465-420-11	(AV320R:UK)..REMOTE COMMANDER(RM-U203)
	1-465-423-11	(AV320R/RA:AEP,WG) ...REMOTE COMMANDER(RM-S103)
905	*1-634-064-11	(AV320R/RA)...PC BOARD, LED
906	*1-634-068-11	(AV320R/RA)...PC BOARD, STAND BY
907	*1-634-061-11	(AV320R/RA)...PC BOARD, MOTOR
908	*1-634-070-11	PC BOARD, HEADPHONE
909	*1-634-069-11	PC BOARD, SPEAKER SWITCH
910	*1-634-067-11	PC BOARD, RELAY (3)
911	*1-634-060-11	PC BOARD, IC
912	*1-635-428-11	(AV320R/RA)...PC BOARD, OUTLET
913	*1-634-071-11	PC BOARD, SPEAKER TERMINAL
914	*A-4334-003-A	(AV220/A).....MOUNTED PCB, POWER
	*A-4334-998-A	(AV320R/RA)...MOUNTED PCB, POWER
915	*A-4303-280-A	(AEP,UK) ...MOUNTED PCB, TUNER (TCB007-2JK2)
	*A-4303-281-A	(WG)...MOUNTED PCB, TUNER (TCB007-2KK2)
916	⚠1-555-750-00	(AEP,WG).....CORD, POWER
	⚠1-556-035-00	(AV320:UK)...CORD, POWER
917	*1-634-065-11	PC BOARD, RELAY (1)
918	*A-4334-070-A	(AV220).....MOUNTED PCB, MAIN
	*A-4334-073-A	(AV320R:WG).....MOUNTED PCB, MAIN
	*A-4334-996-A	(AV320RA,AV320R:UK)... MOUNTED PCB, MAIN
	*A-4334-999-A	(AV220A).....MOUNTED PCB, MAIN
919	1-533-183-11	HOLDER, FUSE
920	*1-634-066-11	(AV320R/RA)...PC BOARD, RELAY (2)
921	*1-634-073-11	PC BOARD, RELAY (4)
922	*1-565-514-11	SOCKET, CONNECTOR 2P
923	1-535-416-00	TERMINAL
924	*1-560-265-00	BASE POST (U-TYPE)
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)
C1	1-162-522-11	CERAMIC CHIP 1000PF 20% 25V
C2	1-124-477-11	ELECT 47MF
C3	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C4	1-162-522-11	CERAMIC CHIP 1000PF 20% 25V
C5	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C6	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C7	1-162-440-11	(WG)...CERAMIC MELF 0.01MF 20% 16V
C8	1-162-440-11	(WG)...CERAMIC MELF 0.01MF 20% 16V
C9	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C10	1-162-516-11	CERAMIC CHIP 100PF 10% 50V
C11	1-101-005-00	(WG)...CERAMIC 0.022MF
C21	1-161-021-11	CERAMIC 0.047MF X
C22	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C23	1-124-477-11	ELECT 47MF
C24	1-123-382-00	ELECT 3.3MF
C25	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C26	1-162-527-11	CERAMIC CHIP 6800PF 20% 12V
C27	1-162-521-11	(WG).....CERAMIC CHIP 680PF 20% 50V
C27	1-162-516-11	(AEP,UK)..CERAMIC CHIP 100PF 10% 50V
C28	1-124-791-11	ELECT 1.0MF
C30	1-124-791-11	ELECT 1.0MF
C31	1-124-902-00	ELECT 0.47MF
C32	1-124-463-00	ELECT 0.1MF
C33	1-130-481-00	PE TEREPHTHALATE 0.0068MF
C34	1-123-382-00	ELECT 3.3MF
C35	1-130-481-00	PE TEREPHTHALATE 0.0068MF
C36	1-123-382-00	ELECT 3.3MF
C37	1-123-875-11	ELECT 10MF
C39	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C40	1-124-463-00	ELECT 0.1MF
C41	1-124-927-11	ELECT 4.7MF
C42	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C43	1-126-176-11	ELECT 220MF
C44	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V
C45	1-123-382-00	ELECT 3.3MF
C46	1-162-524-11	CERAMIC CHIP 2200PF 20% 12V
C47	1-162-522-11	(WG)...CERAMIC CHIP 1000PF 20% 25V
C48	1-123-382-00	ELECT 3.3MF
C49	1-162-524-11	CERAMIC CHIP 2200PF 20% 12V
C50	1-162-522-11	(WG)...CERAMIC CHIP 1000PF 20% 12V
C51	1-124-477-11	ELECT 47MF
C54	1-101-005-00	(WG)...CERAMIC 0.022MF
C61	1-162-624-11	CERAMIC MELF 22000PF 25V
C62	1-162-624-11	CERAMIC MELF 22000PF 25V
C63	1-162-624-11	CERAMIC MELF 22000PF 25V
C64	1-162-624-11	CERAMIC MELF 22000PF 25V
C81	1-102-961-00	CERAMIC 27PF CH
C82	1-102-961-00	CERAMIC 27PF CH
C83	1-162-440-11	CERAMIC MELF 0.01MF 20% 16V

Ref.No.	Part No.	Description			
C84	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C85	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C86	1-124-477-11	ELECT	47MF		
C87	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C88	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C101	1-124-925-11	ELECT	2.2MF		
C102	1-124-463-00	ELECT	0.1MF		
C103	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C104	1-162-440-11	CERAMIC MELF	0.01MF	20%	16V
C105	1-124-477-11	ELECT	47MF		
C301	1-162-211-31	CERAMIC	33PF	5%	50V
C302	1-162-211-31	CERAMIC	33PF	5%	50V
C303	1-161-055-00	CERAMIC	0.022MF	10%	50V
C304	1-161-055-00	CERAMIC	0.022MF	10%	50V
C305	1-124-791-11	ELECT	1MF	20%	50V
C306	1-123-875-11	(AV320R/RA) ...ELECT	10MF	20%	50V
C307	1-136-746-11	FILM	1MF	5%	50V
C308	1-124-464-11	(AV320R/RA) ...ELECT	0.22MF	20%	50V
C309	1-124-464-11	(AV320R/RA) ...ELECT	0.22MF	20%	50V
C401	1-102-106-00	CERAMIC	100PF	10%	50V
C402	1-123-382-00	ELECT	3.3MF	20%	50V
C403	1-102-106-00	CERAMIC	100PF	10%	50V
C404	1-102-106-00	CERAMIC	100PF	10%	50V
C405	1-124-963-11	ELECT	33MF	20%	16V
C406	1-130-480-00	MYLAR	0.0056MF	5%	50V
C407	1-130-473-00	MYLAR	0.0015MF	5%	50V
C408	1-123-382-00	ELECT	3.3MF	20%	50V
C409	1-124-477-11	ELECT	47MF	20%	25V
C410	1-124-477-11	ELECT	47MF	20%	25V
C411	1-102-074-00	CERAMIC	0.001MF	10%	50V
C412	1-102-106-00	CERAMIC	100PF	10%	50V
C413	1-124-927-11	ELECT	4.7MF	20%	50V
C414	1-123-382-00	ELECT	3.3MF	20%	50V
C415	1-123-382-00	ELECT	3.3MF	20%	50V
C416	1-123-875-11	ELECT	10MF	20%	50V
C417	1-124-478-11	ELECT	100MF	20%	25V
C418	1-124-478-11	ELECT	100MF	20%	25V
C419	1-124-478-11	ELECT	100MF	20%	25V
C451	1-102-106-00	CERAMIC	100PF	10%	50V
C452	1-123-382-00	ELECT	3.3MF	20%	50V
C453	1-102-106-00	CERAMIC	100PF	10%	50V
C454	1-102-106-00	CERAMIC	100PF	10%	50V
C455	1-124-963-11	ELECT	33MF	20%	16V
C456	1-130-480-00	MYLAR	0.0056MF	5%	50V
C457	1-130-473-00	MYLAR	0.0015MF	5%	50V
C458	1-123-382-00	ELECT	3.3MF	20%	50V
C463	1-126-163-11		4.7MF	20%	50V
C464	1-123-382-00	ELECT	3.3MF	20%	50V
C465	1-123-382-00	ELECT	3.3MF	20%	50V
C466	1-123-875-11	ELECT	10MF	20%	50V
C501	1-130-489-00	MYLAR	0.033MF	5%	50V
C502	1-124-250-00	ELECT	0.15MF	20%	50V
C503	1-130-481-00	MYLAR	0.0068MF	5%	50V
C504	1-130-489-00	MYLAR	0.033MF	5%	50V
C505	1-126-163-11	ELECT	4.7MF	20%	50V
C506	1-124-925-11	ELECT	2.2MF	20%	50V

Ref.No.	Part No.	Description			
C507	1-101-880-00	CERAMIC	47PF	10%	50V
C508	1-126-163-11	ELECT	4.7MF	20%	50V
C509	1-131-347-00	TANTALUM	1MF	10%	25V
C510	1-130-489-00	MYLAR	0.033MF	5%	50V
C511	1-124-791-11	(AV320R/RA)...ELECT	1MF	20%	50V
C512	1-124-464-11	ELECT	0.22MF	20%	50V
C513	1-124-464-11	ELECT	0.22MF	20%	50V
C514	1-130-493-00	MYLAR	0.068MF	5%	50V
C515	1-102-106-00	CERAMIC	100PF	10%	50V
C551	1-130-489-00	MYLAR	0.033MF	5%	50V
C552	1-124-250-00	ELECT	0.15MF	20%	50V
C553	1-130-481-00	MYLAR	0.0068MF	5%	50V
C554	1-130-489-00	MYLAR	0.033MF	5%	50V
C555	1-126-163-11	ELECT	4.7MF	20%	50V
C556	1-124-925-11	ELECT	2.2MF	20%	50V
C557	1-101-880-00	CERAMIC	47PF	10%	50V
C558	1-126-163-11	ELECT	4.7MF	20%	50V
C559	1-131-347-00	TANTALUM	1MF	10%	25V
C560	1-130-489-00	MYLAR	0.033MF	5%	50V
C561	1-124-791-11	(AV320R/RA)...ELECT	1MF	20%	50V
C565	1-102-106-00	CERAMIC	100PF	10%	50V
C601	1-162-286-31	CERAMIC	220PF	10%	50V
C602	1-124-927-11	ELECT	4.7MF	20%	50V
C603	1-162-288-31	CERAMIC	330PF	10%	50V
C604	1-124-122-11	ELECT	100MF	20%	50V
C605	1-124-910-11	ELECT	47MF	20%	50V
C606	1-124-120-11	ELECT	220MF	20%	16V
C607	1-162-193-31	CERAMIC	3.3PF	10%	50V
C608	1-123-875-11	ELECT	10MF	20%	50V
C618	1-161-055-00	CERAMIC	0.022MF	10%	25V
C621	1-130-495-00	MYLAR	0.1MF	5%	50V
C622	1-130-491-00	MYLAR	0.047MF	5%	50V
C623	1-123-875-11	ELECT	10MF	20%	50V
C624	1-124-472-11	ELECT	470MF	20%	6.3V
C630	1-161-055-00	CERAMIC	0.022MF	10%	50V
C631	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C632	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C633	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C634	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C651	1-162-286-31	CERAMIC	220PF	10%	50V
C652	1-124-927-11	ELECT	4.7MF	20%	50V
C653	1-162-288-31	CERAMIC	330PF	10%	50V
C654	1-124-122-11	ELECT	100MF	20%	50V
C655	1-124-910-11	ELECT	47MF	20%	50V
C656	1-124-120-11	ELECT	220MF	20%	16V
C657	1-162-193-31	CERAMIC	3.3PF	10%	50V
C658	1-123-875-11	ELECT	10MF	20%	50V
C668	1-161-055-00	CERAMIC	0.022MF	10%	25V
C671	1-130-495-00	MYLAR	0.1MF	5%	50V
C672	1-130-491-00	MYLAR	0.047MF	5%	50V
C681	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C682	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C683	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C684	1-161-051-00	(WG)...CERAMIC	0.01MF	10%	50V
C701	1-106-367-00	MYLAR	0.01MF	5%	200V

Ref.No.	Part No.	Description			
C702	1-106-367-00	MYLAR	0.01MF	5%	200V
C704	1-124-478-11	ELECT	100MF	20%	25V
C705	1-124-477-11	ELECT	47MF	20%	25V
C706	1-161-055-00	CERAMIC	0.022MF	10%	50V
C707	1-161-055-00	CERAMIC	0.022MF	10%	50V
C708	1-124-927-11	ELECT	4.7MF	20%	50V
C710	1-124-910-11	ELECT	47MF	20%	50V
C711	1-124-910-11	ELECT	47MF	20%	50V
C712	1-123-875-11	ELECT	10MF	20%	50V
C713	1-124-477-11	ELECT	47MF	20%	25V
C714	1-124-477-11	ELECT	47MF	20%	25V
C716	1-124-464-11	ELECT	0.22MF	20%	50V
C717	1-124-902-00	ELECT	0.47MF	20%	50V
C718	1-124-791-11	ELECT	1MF	20%	50V
C719	1-161-055-00	CERAMIC	0.022MF	10%	50V
C801	1-126-307-11	ELECT	6800MF	20%	50V
C802	1-126-307-11	ELECT	6800MF	20%	50V
C803	1-106-367-00	(AV320R/RA)..MYLAR	0.01MF	5%	200V
C804	1-106-367-00	(AV320R/RA)..MYLAR	0.01MF	5%	200V
C805	1-124-557-11	(AV320R/RA)..ELECT	1000MF	20%	25V
C810	1-124-791-11	ELECT	1MF	20%	50V
C820	1-124-477-11	(AV220/A)...ELECT	47MF	20%	25V
C901 ⚠	1-161-744-00	CERAMIC	0.01MF		400V
C903	1-162-286-31	(WG)...CERAMIC	220PF	10%	50V
C905	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
C906	1-162-288-31	(WG)...CERAMIC	330PF	10%	50V
C907	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
C908	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
C953	1-162-286-31	(WG)...CERAMIC	220PF	10%	50V
C954	1-162-286-31	(WG)...CERAMIC	220PF	10%	50V
C955	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
C956	1-162-288-31	(WG)...CERAMIC	330PF	10%	50V
C957	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
C958	1-161-055-00	(WG)...CERAMIC	0.022MF	10%	50V
CC2	1-249-366-11	CARBON MELF	0	5%	1/5W
CC3	1-249-366-11	CARBON MELF	0	5%	1/5W
CC11	1-249-366-11	(AEP,UK)..CARBON MELF	0	5%	1/5W
CC12	1-249-366-11	(WG).....CARBON MELF	0	5%	1/5W
CF1	1-567-389-11	FILTER, CERAMIC			
CF2	1-567-389-11	FILTER, CERAMIC			
CF3	1-567-389-11	(WG)...FILTER, CERAMIC			
CF21	1-577-075-11	OSCILLATOR, CERAMIC			
CFT21	1-404-853-11	TRANSFORMER,IF(CERAMIC FILTER)			
CN305	*1-564-777-11	(AV320R/RA)... PLUG, CONNECTOR(2.5MM) 2P			
CN803	*1-535-139-00	BASE POST 19MM (10MM PITCH) 2P			
CNJ1	*1-569-387-11	SOCKET,CONNECTOR (PC BOARD)10P			
CNJ2	*1-569-380-11	SOCKET,CONNECTOR (PC BOARD) 3P			
CNJ4	*1-569-380-11	SOCKET,CONNECTOR (PC BOARD) 3P			
CNJ201	*1-569-411-11	SOCKET,CONNECTOR (PC BOARD)16P			
CNJ301	*1-562-334-00	SOCKET, CONNECTOR 10P			
CNJ302	*1-562-334-00	SOCKET, CONNECTOR 10P			
CNJ303	*1-506-778-11	(AV320R/RA)... PLUG, CONNECTOR(2.5MM) 2P			
CNJ304	*1-506-680-11	PLUG, CONNECTOR (2.5MM) 3P			
CNJ305	*1-506-778-11	(AV320R/RA)... PLUG, CONNECTOR(2.5MM) 2P			
CNJ503	*1-506-707-31	PLUG, CONNECTOR (2.5MM) 3P			
CNJ601	*1-506-680-11	PLUG, CONNECTOR (2.5MM) 3P			
CNJ610	*1-569-509-11	CONNECTOR (SOCKET) 4P			
CNJ611	*1-562-573-11	SOCKET, CONNECTOR 8P			
CNJ701	*1-564-778-11	(AV320R/RA)..PLUG, CONNECTOR(2.5MM)4P			
CNJ901 ⚠	1-526-751-00	(AV320R:UK)..OUTLET, AC (AC OUTLET)			
CNJ901 ⚠	1-526-794-11	(AV320RA,AV320R:WG) ..OUTLET, AC (AC OUTLET)			

Ref.No.	Part No.	Description
CNP301	1-565-419-11	PIN, CONNECTOR 10P
CNP302	1-565-419-11	PIN, CONNECTOR 10P
CNP401	*1-564-779-11	PLUG, CONNECTOR (2.5MM) 6P
CNP611	*1-569-508-11	PIN, CONNECTOR 8P
CNP650	*1-569-410-11	PIN, CONNECTOR (PC BOARD) 16P
CNP651	*1-569-388-11	PIN, CONNECTOR (PC BOARD) 3P
CNP652	*1-569-388-11	PIN, CONNECTOR (PC BOARD) 3P
CNP653	*1-569-395-11	PIN, CONNECTOR (PC BOARD) 10P
CNP654	*1-506-529-11	(AV320R/RA)...PIN CONNECTOR, B-B 4P
CNP655	*1-506-529-11	(AV320R/RA)...PIN CONNECTOR, B-B 4P
CNP656	*1-506-529-11	PIN CONNECTOR, B-B 4P
CNP657	*1-506-529-11	PIN CONNECTOR, B-B 4P
CNP658	*1-565-513-11	PIN, CONNECTOR 2P
CNP701	*1-535-116-00	TERMINAL
CNP701-A	*1-564-777-11	(AV320R/RA)..PLUG,CONNECTOR(2.5MM)2P
CNP702	*1-535-116-00	TERMINAL
D301	8-719-912-20	DIODE 1SS120
D302	8-719-912-20	DIODE 1SS120
D303	8-719-912-20	DIODE 1SS120
D304	8-719-912-20	DIODE 1SS120
D305	8-719-912-20	DIODE 1SS120
D306	8-719-912-20	DIODE 1SS120
D307	8-719-912-20	DIODE 1SS120
D308	8-719-912-20	DIODE 1SS120
D309	8-719-912-20	DIODE 1SS120
D311	8-719-912-20	DIODE 1SS120
D312	8-719-912-20	DIODE 1SS120
D313	8-719-914-11	DIODE HZ4ALL
D314	8-719-912-20	DIODE 1SS120
D315	8-719-912-20	DIODE 1SS120
D316	8-719-301-38	(AV320R/RA)..DIODE SEL2210S-C(STANDBY)
D317	8-719-301-52	(AV320R/RA)..DIODE SEL2810A-C (MUTING)
D318	8-719-301-52	DIODE SEL2810A-C (SURROUND)
D319	8-719-301-52	DIODE SEL2810A-C (DBFB)
D320	8-719-912-20	DIODE 1SS120
D322	8-719-912-20	DIODE 1SS120
D323	8-719-912-20	DIODE 1SS120
D324	8-719-912-20	DIODE 1SS120
D326	8-719-912-20	DIODE 1SS120
D327	8-719-912-20	DIODE 1SS120
D328	8-719-303-00	(AV320R/RA)...DIODE SEL2510C (VOLUME)
D401	8-719-912-20	DIODE 1SS120
D402	8-719-912-20	DIODE 1SS120
D501	8-719-912-20	DIODE 1SS120
D502	8-719-912-20	DIODE 1SS120
D601	8-719-912-20	DIODE 1SS120
D602	8-719-912-20	DIODE 1SS120
D603	8-719-912-20	DIODE 1SS120
D604	8-719-912-20	DIODE 1SS120
D605	8-719-912-20	DIODE 1SS120
D607	8-719-912-20	DIODE 1SS120
D651	8-719-912-20	DIODE 1SS120
D702	8-719-010-86	DIODE RD13EL2
D703	8-719-010-29	DIODE UZ-4.3BSB
D704	8-719-011-07	DIODE UZ-27BSB
D705	8-719-010-82	DIODE UZ-15BSB
D706	8-719-010-47	DIODE UZ-6.2BSC
D707	8-719-933-41	DIODE HZS6C3L
D708	8-719-914-11	DIODE HZ4ALL
D709	8-719-912-20	DIODE 1SS120
D710	8-719-912-20	DIODE 1SS120
D711	8-719-912-20	DIODE 1SS120

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
D801	8-719-312-09	DIODE RBA-402
D802	8-719-511-40	(AV320R/RA)...DIODE SIVB40
D803	8-719-912-20	(AV320R/RA)...DIODE ISS120
D813	8-719-000-06	DIODE MC921
F901	⚠ 1-532-973-11	(AV320R/RA)...FUSE (1.6A)
F902	⚠ 1-532-967-11	(AV220/A)...FUSE (1.25A)
F902	⚠ 1-532-973-11	(AV320R/RA)...FUSE(1.6A)
F903	⚠ 1-532-973-11	(AV320R/RA)...FUSE(1.6A)
FE1	1-463-857-11	(WG).....FRONT END, FM
FE1	1-463-862-21	(AEP,UK)...FRONT END, FM
FE61	1-236-461-11	ENCAPSULATED COMPONENT
FL301	1-519-509-11	INDICATOR TUBE, FLUORESCENT
IC21	8-759-821-45	IC LA1851N
IC81	8-759-820-91	IC LC7218
IC301	8-759-149-47	*C UPD75206G-557-1B
IC302	8-749-920-59	(AV320R/RA)...IC AIQH3020S
IC303	8-759-800-95	IC LB1493
IC304	8-759-820-62	(AV320R/RA)...IC LB1639
IC401	8-759-112-93	IC UPC4570HA-1
IC402	8-759-805-14	IC LC7822
IC501	8-759-112-93	IC UPC4570HA-1
IC601	8-749-900-34	(AV320R/RA)...IC STK4182MK2
IC601	8-749-941-52	(AV220/A).....IC STK4152II
J501	1-565-320-11	JACK, PIN 6P (PHONE/CD/TAPE)
J502	1-565-320-11	JACK, PIN 6P (VIDEO/TAPE)
J601	1-507-863-51	JACK, LARGE TYPE (HEADPHONES)
L1	1-410-521-11	MICRO INDUCTOR 100UH
L2	1-410-521-11	(WG)...MICRO INDUCTOR 100UH
L21	1-410-171-11	MICRO INDUCTOR 1MMH
L301	1-410-521-11	INDUCTOR 100UH
L601	*1-420-872-00	COIL, AIR CORE
L651	*1-420-872-00	COIL, AIR CORE
LPF21	1-235-164-00	FILTER, LOW PASS
LPF22	1-235-164-00	FILTER, LOW PASS
Q1	8-729-230-99	TRANSISTOR 2SC2669OY
Q2	8-729-230-99	TRANSISTOR 2SC2669OY
Q3	8-729-230-99	(WG)...TRANSISTOR 2SC2669OY
Q4	8-729-230-99	(WG)...TRANSISTOR 2SC2669OY
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q23	8-729-900-61	TRANSISTOR DTA114ES
Q24	8-729-900-80	TRANSISTOR DTC114ES
Q81	8-729-900-61	TRANSISTOR DTA114ES
Q82	8-729-900-80	TRANSISTOR DTC114ES
Q83	8-729-202-67	TRANSISTOR 2SK246GR3
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB
Q301	8-729-900-36	(AV320R/RA)..TRANSISTOR DTC124ES
Q302	8-729-900-36	(AV320R/RA)..TRANSISTOR DTC124ES
Q303	8-729-900-36	TRANSISTOR DTC124ES
Q304	8-729-900-36	TRANSISTOR DTC124ES
Q401	8-729-107-84	TRANSISTOR 2SC3623A-LK
Q402	8-729-620-05	TRANSISTOR 2SC2603-EF
Q403	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q451	8-729-107-84	TRANSISTOR 2SC3623A-LK
Q452	8-729-620-05	TRANSISTOR 2SC2603-EF
Q501	8-729-202-67	TRANSISTOR 2SK246-GR3
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF
Q503	8-729-141-30	(AV320R/RA)...TRANSISTOR 2SC3623A-LK
Q504	8-729-202-67	TRANSISTOR 2SK246-GR3
Q505	8-729-900-36	TRANSISTOR DTC124ES
Q506	8-729-900-63	TRANSISTOR DTA124ES
Q551	8-729-202-67	TRANSISTOR 2SK246-GR3
Q552	8-729-620-05	TRANSISTOR 2SC2603-EF
Q553	8-729-141-30	(AV320R/RA)...TRANSISTOR 2SC3623A-LK
Q601	8-729-108-14	TRANSISTOR 2SA988-F
Q602	8-729-620-05	TRANSISTOR 2SC2603-EF
Q603	8-729-620-05	TRANSISTOR 2SC2603-EF
Q604	8-729-620-05	TRANSISTOR 2SC2603-EF
Q605	8-729-620-05	TRANSISTOR 2SC2603-EF
Q651	8-729-108-14	TRANSISTOR 2SA988-F
Q701	8-729-107-25	TRANSISTOR 2SD1585-L
Q702	8-729-113-34	TRANSISTOR 2SB733-5
Q703	8-729-180-92	TRANSISTOR 2SD809-K
Q704	8-729-620-05	TRANSISTOR 2SC2603-EF
Q705	8-729-115-22	TRANSISTOR BN1A3Q
Q706	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q707	8-729-620-05	TRANSISTOR 2SC2603-EF
Q708	8-729-900-36	TRANSISTOR DTC124ES
Q709	8-729-620-05	(AV320R/RA)...TRANSISTOR 2SC2603-EF
Q801	8-729-620-05	(AV320R/RA)...TRANSISTOR 2SC2603-EF
R1	1-249-397-11	(WG)...CARBON (SMALL) 22
R1	1-249-401-11	(AEP,UK)...CARBON (SMALL)47
R3	1-249-329-11	CARBON MELF 330 5% 1/8W
R4	1-249-329-11	CARBON MELF 330 5% 1/8W
R5	1-249-329-11	CARBON MELF 330 5% 1/8W
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W
R7	1-249-329-11	CARBON MELF 330 5% 1/8W
R8	1-249-332-11	CARBON MELF 560 5% 1/8W
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W
R10	1-249-329-11	(WG)...CARBON MELF 330 5% 1/8W
R11	1-249-350-11	(WG)...CARBON MELF 18K 5% 1/8W
R12	1-249-329-11	(WG)...CARBON MELF 330 5% 1/8W
R13	1-249-334-11	(WG)...CARBON MELF 820 5% 1/8W
R14	1-249-352-11	(WG)...CARBON MELF 27K 5% 1/8W
R15	1-249-347-11	(WG)...CARBON MELF 10K 5% 1/8W
R16	1-249-343-11	(WG)...CARBON MELF 4.7K 5% 1/8W
R21	1-249-404-00	CARBON (SMALL)82
R22	1-249-433-11	CARBON (SMALL)22K
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W
R26	1-249-340-11	(WG)...CARBON MELF 2.7K 5% 1/8W
R27	1-249-432-11	CARBON (SMALL)18K
R28	1-249-423-11	CARBON (SMALL)3.3K
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W
R31	1-249-331-11	CARBON MELF 470 5% 1/8W
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W
R36	1-249-429-11	CARBON (SMALL)10K
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
R39	1-249-339-11	CARBON MELF	2.2K	5%	1/8W
R40	1-249-338-11	CARBON MELF	1.8K	5%	1/8W
R41	1-249-344-11	CARBON MELF	5.6K	5%	1/8W
R42	1-249-359-11	CARBON MELF	100K	5%	1/8W
R43	1-249-363-11	CARBON MELF	220K	5%	1/8W
R44	1-249-339-11	CARBON MELF	2.2K	5%	1/8W
R45	1-249-338-11	CARBON MELF	1.8K	5%	1/8W
R46	1-249-344-11	CARBON MELF	5.6K	5%	1/8W
R47	1-249-409-11	CARBON (SMALL)	220		
R48	1-249-359-11	CARBON MELF	100K	5%	1/8W
R49	1-249-359-11	CARBON MELF	100K	5%	1/8W
R61	1-249-359-11	CARBON MELF	100K	5%	1/8W
R62	1-249-355-11	CARBON MELF	47K	5%	1/8W
R63	1-249-315-11	CARBON MELF	22	5%	1/8W
R81	1-249-335-11	CARBON MELF	1K	5%	1/8W
R82	1-249-335-11	CARBON MELF	1K	5%	1/8W
R83	1-249-335-11	CARBON MELF	1K	5%	1/8W
R84	1-249-335-11	CARBON MELF	1K	5%	1/8W
R85	1-249-347-11	CARBON MELF	10K	5%	1/8W
R86	1-249-355-11	CARBON MELF	1K	5%	1/8W
R87	1-249-347-11	CARBON MELF	10K	5%	1/8W
R88	1-249-343-11	CARBON MELF	4.7K	5%	1/8W
R89	1-249-335-11	CARBON MELF	1K	5%	1/8W
R90	1-249-347-11	CARBON MELF	10K	5%	1/8W
R91	1-249-335-11	CARBON MELF	1K	5%	1/8W
R92	1-249-401-11	CARBON (SMALL)	47		
R101	1-249-341-11	CARBON MELF	3.3K	5%	1/8W
R102	1-249-332-11	CARBON MELF	560	5%	1/8W
R103	1-249-335-11	CARBON MELF	1K	5%	1/8W
R104	1-249-328-11	CARBON MELF	270	5%	1/8W
R105	1-249-343-11	CARBON MELF	4.7K	5%	1/8W
R106	1-249-339-11	CARBON MELF	2.2K	5%	1/8W
R107	1-249-343-11	CARBON MELF	4.7K	5%	1/8W
R108	1-249-323-11	CARBON MELF	100	5%	1/8W
R109	1-249-343-11	CARBON MELF	4.7K	5%	1/8W
R110	1-249-405-11	CARBON (SMALL)	100		
R301	1-249-411-11	CARBON	330	5%	1/4W
R302	1-249-411-11	CARBON	330	5%	1/4W
R303	1-249-411-11	CARBON	330	5%	1/4W
R304	1-249-411-11	CARBON	330	5%	1/4W
R305	1-249-429-11	CARBON	10K	5%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/4W
R307	1-249-429-11	CARBON	10K	5%	1/4W
R308	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-249-429-11	CARBON	10K	5%	1/4W
R312	1-249-431-11	CARBON	15K	5%	1/4W
R313	1-249-417-11	CARBON	1K	5%	1/4W
R314	1-249-441-11	CARBON	100K	5%	1/4W
R315	1-249-437-11	CARBON	47K	5%	1/4W
R316	1-249-441-11	CARBON	100K	5%	1/4W
R321	1-249-410-11	(AV320R/RA)...CARBON	270	5%	1/4W
R322	1-249-410-11	CARBON	270	5%	1/4W
R323	1-249-410-11	CARBON	270	5%	1/4W
R324	1-249-410-11	CARBON	270	5%	1/4W
R325	1-249-441-11	CARBON	100K	5%	1/4W
R331	1-249-437-11	CARBON	47K	5%	1/4W
R332	1-249-437-11	CARBON	47K	5%	1/4W

Ref.No.	Part No.	Description			
R333	1-249-437-11	CARBON	47K	5%	1/4W
R334	1-249-437-11	CARBON	47K	5%	1/4W
R335	1-249-437-11	CARBON	47K	5%	1/4W
R336	1-249-431-11	CARBON	15K	5%	1/4W
R337	1-249-437-11	CARBON	47K	5%	1/4W
R338	1-249-437-11	CARBON	47K	5%	1/4W
R339	1-249-393-11	(AV320R/RA)...CARBON	10	5%	1/4W
R401	1-249-411-11	CARBON	330	5%	1/4W
R402	1-249-417-11	CARBON	1K	5%	1/4W
R403	1-249-417-11	CARBON	1K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-417-11	CARBON	1K	5%	1/4W
R406	1-249-425-11	CARBON	4.7K	5%	1/4W
R407	1-247-897-11	CARBON	560K	5%	1/4W
R408	1-247-897-11	CARBON	560K	5%	1/4W
R409	1-249-437-11	CARBON	47K	5%	1/4W
R410	1-247-897-11	CARBON	560K	5%	1/4W
R411	1-249-416-11	CARBON	820	5%	1/4W
R412	1-247-897-11	CARBON	560K	5%	1/4W
R413	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-247-897-11	CARBON	560K	5%	1/4W
R415	1-249-417-11	CARBON	1K	5%	1/4W
R416	1-249-411-11	CARBON	330	5%	1/4W
R417	1-249-411-11	CARBON	330	5%	1/4W
R418	1-249-425-11	CARBON	4.7K	5%	1/4W
R419	1-249-425-11	CARBON	4.7K	5%	1/4W
R420	1-249-437-11	CARBON	47K	5%	1/4W
R421	1-247-901-11	CARBON	820K	5%	1/4W
R422	1-249-425-11	CARBON	4.7K	5%	1/4W
R423	1-249-441-11	CARBON	100K	5%	1/4W
R424	1-249-421-11	CARBON	2.2K	5%	1/4W
R425	1-249-441-11	CARBON	100K	5%	1/4W
R426	1-249-405-11	CARBON	100	5%	1/4W
R428	1-249-417-11	(WG)...CARBON	1K	5%	1/4W
R451	1-249-411-11	CARBON	330	5%	1/4W
R452	1-249-417-11	CARBON	1K	5%	1/4W
R453	1-249-417-11	CARBON	1K	5%	1/4W
R454	1-249-425-11	CARBON	4.7K	5%	1/4W
R455	1-249-417-11	CARBON	1K	5%	1/4W
R456	1-249-425-11	CARBON	4.7K	5%	1/4W
R457	1-247-897-11	CARBON	560K	5%	1/4W
R458	1-247-897-11	CARBON	560K	5%	1/4W
R459	1-249-437-11	CARBON	47K	5%	1/4W
R460	1-247-897-11	CARBON	560K	5%	1/4W
R461	1-249-416-11	CARBON	820	5%	1/4W
R462	1-247-897-11	CARBON	560K	5%	1/4W
R463	1-249-437-11	CARBON	47K	5%	1/4W
R464	1-247-897-11	CARBON	560K	5%	1/4W
R465	1-249-417-11	CARBON	1K	5%	1/4W
R469	1-249-425-11	CARBON	4.7K	5%	1/4W
R470	1-249-437-11	CARBON	47K	5%	1/4W
R471	1-247-901-11	CARBON	320K	5%	1/4W
R472	1-249-425-11	CARBON	4.7K	5%	1/4W
R478	1-249-417-11	(WG)...CARBON	1K	5%	1/4W
R501	1-249-429-11	CARBON	10K	5%	1/4W
R502	1-249-421-11	CARBON	2.2K	5%	1/4W
R503	1-249-441-11	CARBON	100K	5%	1/4W

Ref.No.	Part No.	Description			
R504	1-249-427-11	CARBON	6.8K	5%	1/4W
R505	1-249-438-11	CARBON	56K	5%	1/4W
R506	1-249-441-11	CARBON	100K	5%	1/4W
R507	1-247-883-00	CARBON	150K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-412-11	CARBON	390	5%	1/4W
R510	1-249-427-11	CARBON	6.8K	5%	1/4W
R511	1-249-417-11	CARBON	1K	5%	1/4W
R512	1-249-430-11	CARBON	12K	5%	1/4W
R513	1-249-404-00	(AV320R/RA)...CARBON	82	5%	1/4W
R514	1-249-429-11	(AV320R/RA)...CARBON	10K	5%	1/4W
R515	1-249-434-11	CARBON	27K	5%	1/4W
R516	1-249-434-11	CARBON	27K	5%	1/4W
R517	1-249-441-11	CARBON	100K	5%	1/4W
R518	1-249-441-11	CARBON	100K	5%	1/4W
R519	1-249-441-11	CARBON	100K	5%	1/4W
R520	1-247-903-00	CARBON	1M	5%	1/4W
R521	1-249-428-11	CARBON	8.2K	5%	1/4W
R522	1-247-903-00	CARBON	1M	5%	1/4W
R523	1-249-441-11	(AV320R/RA)...CARBON	100K	5%	1/4W
R524	1-249-426-11	(AV320R/RA)...CARBON	5.6K	5%	1/4W
R551	1-249-429-11	CARBON	10K	5%	1/4W
R552	1-249-421-11	CARBON	2.2K	5%	1/4W
R553	1-249-441-11	CARBON	100K	5%	1/4W
R554	1-249-427-11	CARBON	6.8K	5%	1/4W
R555	1-249-438-11	CARBON	56K	5%	1/4W
R556	1-249-441-11	CARBON	100K	5%	1/4W
R557	1-247-883-00	CARBON	150K	5%	1/4W
R558	1-249-417-11	CARBON	1K	5%	1/4W
R559	1-249-412-11	CARBON	390	5%	1/4W
R560	1-249-427-11	CARBON	6.8K	5%	1/4W
R561	1-249-417-11	CARBON	1K	5%	1/4W
R562	1-249-430-11	CARBON	12K	5%	1/4W
R563	1-249-404-00	(AV320R/RA)...CARBON	82	5%	1/4W
R564	1-249-429-11	(AV320R/RA)...CARBON	10K	5%	1/4W
R601	1-249-417-11	CARBON	1K	5%	1/4W
R602	1-249-438-11	CARBON	56K	5%	1/4W
R603	1-249-411-11	CARBON	330	5%	1/4W
R604	1-249-421-11	(AV220/A).....CARBON	2.2K	5%	1/4W
R604	1-249-423-11	(AV320R/RA)...CARBON	3.3K	5%	1/4W
R605	1-249-438-11	CARBON	56K	5%	1/4W
R606	1-247-756-11	(AV220/A).....CARBON	2.2K	5%	1/2W
R606	1-247-758-11	(AV320R/RA)...CARBON	3.3K	5%	1/2W
R607 ⚠	1-217-151-00	RES, METAL PLATE 0.22			
R608	1-249-417-11	CARBON	1K	5%	1/4W
R612 ⚠	1-249-405-11	CARBON	100	5%	1/4W F
R615 ⚠	1-249-405-11	CARBON	100	5%	1/4W F
R621	1-249-427-11	CARBON	6.8K	5%	1/4W
R622	1-249-435-11	CARBON	33K	5%	1/4W
R623	1-249-433-11	CARBON	22K	5%	1/4W
R624 ⚠	1-247-727-11	CARBON	10	5%	1/2W F
R625	1-247-768-00	CARBON	2.4	5%	1/4W
R626	1-249-441-11	CARBON	100K	5%	1/4W
R627	1-249-435-11	CARBON	33K	5%	1/4W
R628	1-249-427-11	CARBON	6.8K	5%	1/4W
R629 ⚠	1-249-399-11	CARBON	33	5%	1/4W F

Ref.No.	Part No.	Description			
R630	1-249-417-11	CARBON	1K	5%	1/4W
R631	1-249-429-11	CARBON	10K	5%	1/4W
R632	1-249-441-11	CARBON	100K	5%	1/4W
R633	1-249-429-11	CARBON	10K	5%	1/4W
R634	1-249-423-11	CARBON	3.3K	5%	1/4W
R635	1-249-441-11	CARBON	100K	5%	1/4W
R636	1-247-903-00	CARBON	1M	5%	1/4W
R637 ⚠	1-215-866-11	(AV220/A).....METAL OXIDE	330	5%	1W F
R637 ⚠	1-216-432-00	(AV320R/RA)...METAL OXIDE	820	5%	1W F
R638 ⚠	1-215-889-00	(AV220/A).....METAL OXIDE	330	5%	2W F
R638 ⚠	1-216-454-11	(AV320R/RA)...METAL OXIDE	390	5%	2W F
R639	1-247-768-00	CARBON	2.4	5%	1/4W
R640	1-249-393-11	(WG)...CARBON	10	5%	1/4W
R641	1-249-393-11	(WG)...CARBON	10	5%	1/4W
R651	1-249-417-11	CARBON	1K	5%	1/4W
R652	1-249-438-11	CARBON	56K	5%	1/4W
R653	1-249-411-11	CARBON	330	5%	1/4W
R654	1-249-421-11	(AV220/A).....CARBON	2.2K	5%	1/4W
R654	1-249-423-11	(AV320R/RA)...CARBON	3.3K	5%	1/4W
R655	1-249-438-11	CARBON	56K	5%	1/4W
R656	1-247-756-11	(AV220/A).....CARBON	2.2K	5%	1/2W
R656	1-247-758-11	(AV320R/RA)...CARBON	3.3K	5%	1/2W
R657	1-217-151-00	RES, METAL PLATE 0.22			
R658-A	1-249-417-11	CARBON	1K	5%	1/4W
R658-B	1-215-889-00	(AV220/A).....METAL OXIDE	330	5%	2W F
R658-B	1-216-454-11	(AV320R/RA)...METAL OXIDE	390	5%	2W F
R671	1-249-427-11	CARBON	6.8K	5%	1/4W
R672	1-249-435-11	CARBON	33K	5%	1/4W
R673	1-249-433-11	CARBON	22K	5%	1/4W
R674 ⚠	1-247-727-11	CARBON	10	5%	1/2W F
R675	1-247-768-00	CARBON	2.4	5%	1/4W
R676	1-249-441-11	CARBON	100K	5%	1/4W
R689	1-247-768-00	CARBON	2.4	5%	1/4W
R690	1-249-393-11	(WG)...CARBON	10K	5%	1/4W
R691	1-249-393-11	(WG)...CARBON	10K	5%	1/4W
R702	1-249-422-11	CARBON	2.7K	5%	1/4W
R703 ⚠	1-216-448-11	METAL OXIDE	39	5%	2W F
R705	1-249-423-11	CARBON	3.3K	5%	1/4W
R706 ⚠	1-249-405-11	CARBON	100	5%	1/4W F
R707	1-249-410-11	CARBON	270	5%	1/
R708 ⚠	1				
R709	1-249-423-11	CARBON	3.3K	5%	1/4W
R710	1-249-429-11	(AV220/A).....CARBON	10K	5%	1/4W
R710	1-249-433-11	(AV320R/RA)...CARBON	22K	5%	1/4W
R711	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-429-11	CARBON	10K	5%	1/4W
R713	1-249-426-11	CARBON	5.6K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-249-426-11	CARBON	5.6K	5%	1/4W
R716	1-249-417-11	(AV320R/RA)...CARBON	1K	5%	1/4W

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Replace only with part number specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
R717	1-249-429-11	(AV320R/RA)...CARBON 10K 5% 1/4W
R718	⚠1-249-401-11	CARBON 47 5% 1/4W F
R719	1-249-425-11	CARBON 4.7K 5% 1/4W
R720	1-249-437-11	CARBON 47K 5% 1/4W
R721	1-249-413-11	CARBON 470 5% 1/4W
R722	1-249-437-11	CARBON 47K 5% 1/4W
R723	1-249-437-11	CARBON 47K 5% 1/4W
R724	1-249-437-11	CARBON 47K 5% 1/4W
R725	1-249-437-11	CARBON 47K 5% 1/4W
R726	1-249-410-11	(AV320R/RA)...CARBON 270 5% 1/4W
R726	1-249-430-11	(AV220/A).....CARBON 12K 5% 1/4W
R727	1-249-437-11	(AV220/A)... CARBON 47K 5% 1/4W
R801	⚠1-249-389-11	CARBON 4.7 5% 1/4W F
R802	1-249-437-11	(AV320R/RA)...CARBON 47K 5% 1/4W
R803	1-249-396-11	(AV320R/RA)...CARBON 18 5% 1/4W
R804	⚠1-247-739-11	(AV320R/RA)...CARBON 100 5% 1/2W F
R804	⚠1-249-482-11	(AV220/A).....CARBON 4.7 5% 1/2W F
R805	1-249-425-11	(AV320R/RA)...CARBON 4.7K 5% 1/4W
R901	1-249-396-11	(WG)...CARBON 18 5% 1/4W
R951	1-249-396-11	(WG)...CARBON 18 5% 1/4W
RB301	1-233-081-11	COMPOSITION CIRCUIT BLOCK
RB302	1-232-955-11	COMPOSITION CIRCUIT BLOCK
RB303	1-232-998-11	COMPOSITION CIRCUIT BLOCK
RV21	1-238-013-11	RES, ADJ, CARBON 2.2K (FM STEREO SPARATION)
RV23	1-238-021-11	RES, ADJ, CARBON 220K (AM METER)
RV24	1-236-019-11	(WG)..... RES, ADJ, CARBON 47K (FM STEREO OPERATION LEVEL)
RV24	1-238-017-11	(AEP,UK)... RES, ADJ, CARBON 22K (FM STEREO OPERATION LEVEL)
RV501	1-238-942-11	RES, VAR, CARBON 100K (BALANCE)
RV502	1-238-074-11	(AV220/A).....RES, VAR, CARBON 100K/100K (VOLUME)
RV502	1-238-943-11	(AV320R/RA)...RES, VAR, CARBON 100K/100K (VOLUME)
RV503	1-238-941-11	RES, VAR, CARBON 50K/50K (TONE BASS)
RV504	1-238-941-11	RES, VAR, CARBON 50K/50K (TONE TREBLE)
RY601	1-515-533-11	RELAY
RY901	1-515-720-11	(AV320R/RA)...RELAY
S301	1-554-303-21	SWITCH, KEY BOARD (TUNING DIRECT)
S302	1-554-303-21	SWITCH, KEY BOARD (PRESET -)
S303	1-554-303-21	SWITCH, KEY BOARD (TUNING -)
S304	1-554-303-21	SWITCH, KEY BOARD (BAND FM)
S305	1-554-303-21	SWITCH, KEY BOARD (FM MODE)
S306	1-554-303-21	SWITCH, KEY BOARD (PRESET +)
S307	1-554-303-21	SWITCH, KEY BOARD (TUNING +)
S308	1-554-303-21	SWITCH, KEY BOARD (BAND AM)
S310	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S311	1-554-303-21	SWITCH, KEY BOARD (VIDEO)
S312	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S313	1-554-303-21	SWITCH, KEY BOARD (TUNING)
S314	1-554-303-21	SWITCH, KEY BOARD (CD)
S315	1-554-303-21	SWITCH, KEY BOARD (7)
S316	1-554-303-21	SWITCH, KEY BOARD (8)
S317	1-554-303-21	SWITCH, KEY BOARD (9)
S318	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S319	1-554-303-21	SWITCH, KEY BOARD (4)
S320	1-554-303-21	SWITCH, KEY BOARD (5)
S321	1-554-303-21	SWITCH, KEY BOARD (6)
S322	1-554-303-21	SWITCH, KEY BOARD (0)
S323	1-554-303-21	SWITCH, KEY BOARD (1)
S324	1-554-303-21	SWITCH, KEY BOARD (2)
S325	1-554-303-21	SWITCH, KEY BOARD (3)
S326	1-554-303-21	SWITCH, KEY BOARD (SHIFT)
S327	1-554-303-21	SWITCH, KEY BOARD (DBFB)
S328	1-554-303-21	(AV320R/RA)...SWITCH, KEY BOARD (MUTING -20dB)
S329	1-554-303-21	SWITCH, KEY BOARD (SURROUND)
S330	1-554-303-21	(AV320R/RA)..SWITCH, KEY BOARD (SYSTEM POWER)(POWER)
S601	1-571-485-11	SWITCH, PUSH (2 KEY)(SPEAKER A)
S602	1-571-485-11	SWITCH, PUSH (2 KEY)(SPEAKER B)
S901	⚠1-554-685-11	(AV220/A)...SWITCH, PUSH (AC POWER)(1 KEY)
S902	1-570-046-21	(AEP)..SWITCH, VOLTAGE CHANGE (SPEAKER IMPEDANCE SELECTOR)
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
T23	1-236-465-11	(WG)...ENCAPSULATED COMPONENT
T901	⚠1-449-758-11	(AV320R:UK)...TRANSFORMER, POWER
T901	⚠1-449-760-11	(AV320R:WG)...TRANSFORMER, POWER
T901	⚠1-449-761-11	(AV220).....TRANSFORMER, POWER
T901	⚠1-450-140-11	(AV320RA).....TRANSFORMER, POWER
T901	⚠1-450-141-11	(AV220A).....TRANSFORMER, POWER
T902	⚠1-448-523-11	(AV320R/RA)...TRANSFORMER, POWER
TM1	*1-537-138-31	(AEP,UK)...TERMINAL BOARD (ANT)
TM601	⚠1-536-706-00	TERMINAL BOARD (SPEAKER A/B)
TP1	*1-560-060-00	PIN, CONNECTOR 2P
VZR901	⚠1-807-180-11	(AV320R/RA)..VARISTOR SNR-14A300K
X301	1-567-170-00	OSCILLATOR, CERAMIC (4.194MHz)
XT81	1-577-126-11	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

1-465-420-11	(AV320R:UK)...REMOTE COMMANDER (RM-U203)
1-465-420-11	(AV320RA,AV320R:WG)... REMOTE COMMANDER(RM-S103)
1-501-369-11	(AEP,UK)...ANTENNA
1-501-374-11	ANTENNA, LOOP
2-181-754-01	(AV320RA/AV320R)...COVER,BATTERY
3-751-607-11	(AEP)...MANUAL, INSTRUCTION (ENGLISH, F, E)
3-751-607-41	(UK)....MANUAL, INSTRUCTION (ENGLISH)
3-751-607-51	(AEP)...MANUAL, INSTRUCTION (D, NL, S)
3-751-607-61	(WG)....MANUAL, INSTRUCTION(D)
3-751-651-41	INSTRUCTION
4-925-079-01	(AV320R:UK)...COVER(6),BATTERY
*4-931-010-01	CUSHION (BOTTOM)
*4-931-011-01	CUSHION (TOP)
*4-938-141-01	(AV320R/RA)...INDIVIDUAL CARTON
*4-931-097-01	(AV220/A).....INDIVIDUAL CARTON

F :FRENCH D :GERMAN
E :SPANISH NL:DUTCH
S :SWEDISH

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